VIRGINIA CAVALCADE

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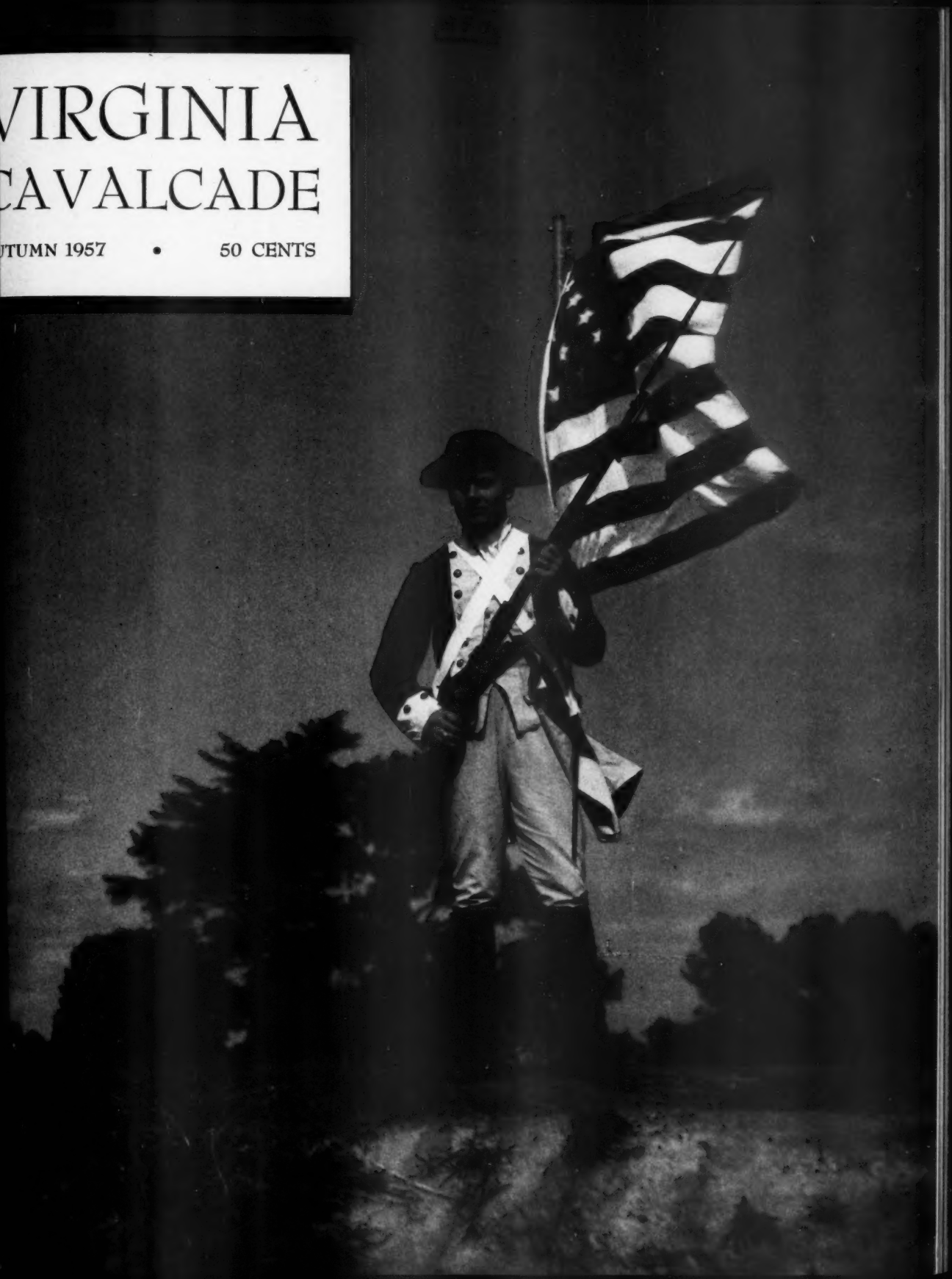

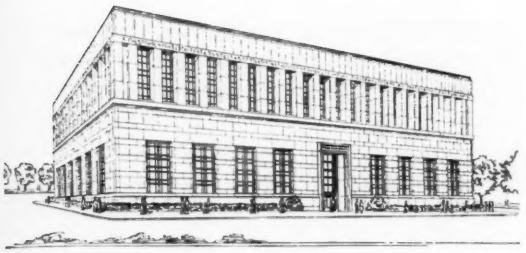

VIRGINIA CAVALCADE

Volume VII, Number 2 Autumn, 1957

"I know of no way of judging the future but by the past."—Patrick Henry

Virginia Cavalcade

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The Reviewing Stand

As our readers have observed, this year's issues of *Virginia Cavalcade* have been influenced in their content by the Jamestown Festival. This is true, once more, of the present issue. Autumnal features of the Festival program centered upon Yorktown, where besieged British forces under the command of Lord Cornwallis surrendered on October 19, 1781. On the same day of this year the Festival's final climax—but not its closing event—was reached, when thousands of distinguished citizens, militiamen in uniforms of the eighteenth and twentieth centuries, and spectators gathered at Yorktown to witness a pageant of the siege and surrender of 1781.

George Washington's timetable for the coördinated movement of American and French forces, both military and naval, to bottle up the British at Yorktown was conceived and executed with perfection and even luck. Unpreventably less fortunate in its own timing, *Virginia Cavalcade* has fallen behind schedule. But that ill wind has blown a compensating good. For our staff photographer was at Yorktown on October 19, 1957, and four of our color pictures reproduced in this issue are among the results. So also is the picture of a military unit aligned on historic ground that appears on this page.

Textually, we feature Yorktown at three epochs in its history. One article tells something of the siege of 1781; another summarizes the second siege, which developed in 1862; and the third takes a look at 1781-inspired poetry written for the centennial of American victory.

We have aligned in our current procession two articles not written by scholars in the Virginia State Library staff. Helen Hill Miller, veteran journalist, finds time occasionally to continue her studies of the Revolutionary period. Her biography of *George Mason, Constitutionalist* appeared in 1938. She has

Acknowledgments

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also published two studies of France. Her contribution to *Virginia Cavalcade* reminds us of certain unfamiliar associations between that nation and Virginians.

Dr. Lester J. Cappon, Director of the Institute of Early American History and Culture in Williamsburg, has revived for us his earlier interest in the Southern, ante-bellum iron industry. The site upon which he focuses attention is beside U. S. Route 60 in Alleghany County, only about as far east of the Old Dominion's western boundary as Yorktown is west of our eastern boundary. Hurrying motorists pass the place without even recognizing that one of Virginia's chief industrial operations formerly thrived there. All who read about Lucy Selina Furnace will discover new information derived from materials not used by earlier writers.

We hope that you'll like this belated *Cavalcade*. The next one, featuring four new authors, will follow within four weeks.

P. Johnston, *The Yorktown Campaign and the Surrender of Cornwallis, 1781* (New York, 1881); Virginia State Library photo, courtesy of the Virginia Historical Society; **21,** *Harper's Weekly,* October 22, 1881; **22,** Benson J. Lossing, *Pictorial Field-Book of the Revolution* (New York, 1855), vol. II; **27,** Peter S. Michie, *General McClellan* (New York, 1901); Francis Trevelyan Miller, *The Photographic History of the Civil War* (New York, 1911), vol. X; **28,** *Battles and Leaders of the Civil War* (New York, 1888), vol. II; **29,** *Battles and Leaders of the Civil War* (New York, 1888), vol. II; Francis Trevelyan Miller, *The Photographic History of the Civil War* (New York, 1911), vol. V; **30,** Francis Trevelyan Miller, *The Photographic History of the Civil War* (New York, 1911), vol. V; **31,** Lynchburg Foundry Company; **32,** Thomas Leonard Watson, *Mineral Resources of Virginia* (Lynchburg, 1907); **33-35,** McCormick Collection, State Historical Society of Wisconsin; **36-39,** Tredegar Company Records, Virginia State Library; **42,** Covington Chamber of Commerce, *Alleghany County, Virginia: Its Resources and Industries* (Covington, 1907); **43,** Miller Studio photocopy, Covington; **44,** *The Covington Virginian* staff photo; Virginia State Library photo by Wirt A. Christian, Jr.; **45,** *The Covington Virginian* staff photos; **46,** Ralph Thompson photo, Charlottesville.

Nathaniel Bacon's Poetic Epitaphs

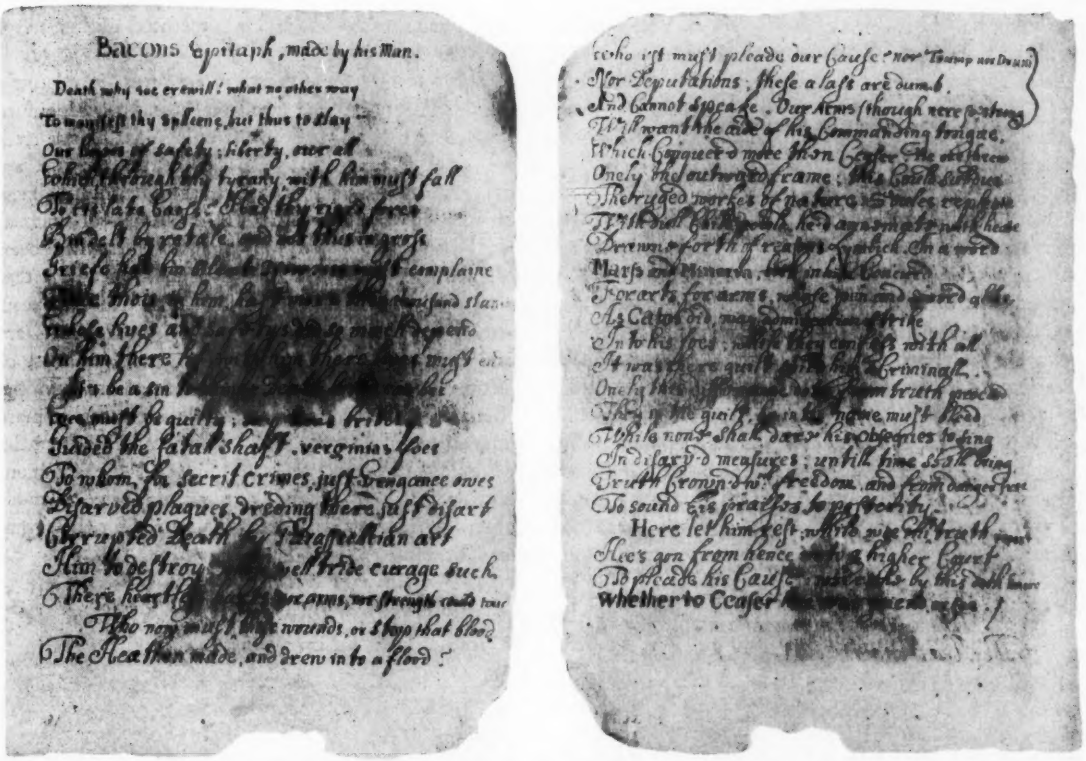
Two contemporary poems present opposite views of Bacon's character.

"The great subject of later Virginia literature in the seventeenth century was Bacon's Rebellion," the scholarly Howard Mumford Jones concluded in 1946. This dramatic struggle, which has since inspired many romantic novels, called forth in its own time a rich group of original historical narratives. One of these contains some fine pieces of colonial verse. This narrative, usually called "The History of Bacon's and Ingram's Rebellion," though the title page of the manuscript is missing, contains two poems on the death of Nathaniel Bacon which are among the earliest verses written in America. Moreover, they are widely believed to be excellent examples of colonial poetry.

The manuscript, originally secured from an unidentified family of the Northern Neck by Captain Nathaniel Burwell late in the eighteenth century, was found among his family papers in 1812 by William A. Burwell, a member of Congress from Virginia. Burwell loaned the manuscript to Josiah Quincy, a Massachusetts congressman, who in turn loaned it to the Massachusetts Historical Society to be printed, which it was in 1814; but, through an unfortunate misunderstanding, Virginia did not get the manuscript back for fifty-four years. It was eventually returned, however, in 1868 and is now in the custody of the Virginia Historical Society.

The manuscript, which is incomplete, was written by a Virginian who apparently lived through the events

An artist's conception portrays three cheerless followers of Nathaniel Bacon planning what to do next, while his corpse lies in the shadowy background. His burial place is unknown.


Bacons Epitaph, made by his Man.

Death why soe cruell? what no other way
To manifest thy spleene, but thus to slay
Our hopes of safety, liberty, ever all
Comfort thereinn thy treachry with him must fall
To thy fatal Dart. Had thy direct force
Dealt by fatale, and not thus a coarse
Seized him [illegible] complaine
[illegible] thou by him [illegible] stand slaine
[illegible] hues [illegible] must expected
On him there [illegible] must
[illegible] be a sin
[illegible] must be guilty [illegible] tribute
Judged the fatal shaft. verginias foes
To whom, for secrit Crimes, just Vengeance owes
Deserved plagues, dreeing there just desart
Corrupted Death by Parracelsian art
Him to destroy [illegible] well tride courage such.
Where heart [illegible] our arms, nor strength could touch
Who now must [illegible] wounds, or shop that blood
The Heathen made, and drew in to a flood?

[illegible] who ist must pleade our cause now Trumpe nor Drumm
Nor Reputations, these a last are dumb.
And cannot speake. Our Arms though nere soe strong
Will want the aide of his Commanding tongue,
Which Conquered more than Cæsar. He alone
Onely the outward frame, this Castle throwe
The rugged workes of nature, walles emplate
With dial Castle, he'd a mote, a mount, a heade
Drawne forth of reason's magick. On a word
Mars and Minerva, both in Councell
Together for arms, whose pen and sword alike
As Cato's did, must Dominion strike
In to his foes, while they confest with all
It was there quill [illegible] Criminall.
One by these [illegible] from truth proceed
They in the guilty [illegible] must bleed
While now Shakspeare his Obsequies to sing
In solemn measures; untill time shall bring
Truth from this freedom, and from outrages free
To sound his praises to posterity.
Here let him rest, while we this truth report
Hee's gon from hence to a higher Court
To pleade his cause [illegible] by this will know
Whether to Ceasar [illegible]

"Bacon's Epitaph, made by his Man," eulogizes the leader of the rebellion of 1676. This facsimile is reproduced from the original manuscript in the Virginia Historical Society.

it relates. Unlike other accounts of the rebellion, however, this one has a marked literary quality; it is, as Dr. Jones has remarked, "stylistically the most interesting work written in the period." As history, it is fairly impartial; the author is not a supporter of Bacon, but neither does he have much respect for Sir William Berkeley. He maintains, in fact, an attitude of something close to philosophical cynicism, as if he were occupying a post high above the vulgar strife.

This was, of course, the pose of certain English writers of this period, and the work is very much in the seventeenth-century literary style. It reflects on this side of the ocean, remarked Moses Coit Tyler, the literary foibles that were in fashion on the other side. There is a certain straining after wit, after balance and antithesis and clever comparisons, as in the following sample:

> This strange and unexpected news put him [Bacon, on hearing he was proclaimed a traitor], and som with him, shrodely to there trumps, beleveing that a few such deales, or shuffles (call them which you please) might quickly ring the cards, and game too, out of his hand. He perceved that he was falne (like the corne betwene the stones) so that if he did not looke the better about him, he might chance to be ground to powder. He knew that to have a certaine enimy in his frunt, and more then uncertaine friends in his reare, portended no grate security from a violent death, and that there could be no grate differance betwene his being wounded to death in his brest, with bows and Arows, or in the back with Guns and Musquit bullits. . . .

Despite this imitativeness, however, the author was apparently a person of unusual sophistication and training, one who had a good deal of literary ability and a rare sense of humor.

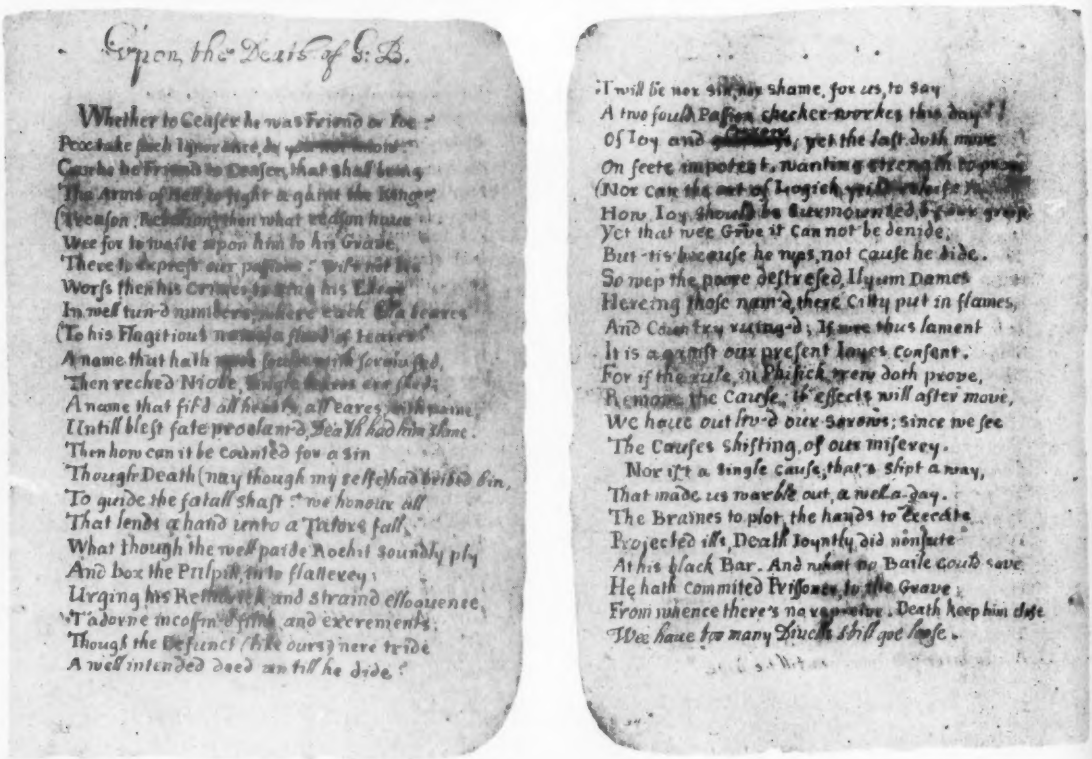
There is a great deal of mystery surrounding the two poems included in the midst of his narrative. The first, "Bacon's Epitaph, made by his Man," is a eulogy of the hero, while the second, "Upon the Death of G: B" is an attack on him. The author's ostensible reason for copying two such opposite poems is, in his

own words: "There was many coppes of Verces made after his departure, calculated to the Lattitude of there affections who composed them; as a relish taken from both appetites I have here sent you a cuple." Both verses, however, are very similar in style, and the second seems to be a reply to the first, so it is likely that both were actually written by the same person. Most modern scholars agree that this is probably the case, that the poems constitute a sort of literary exercise, and that the author of the verses is the same as the author of the narrative.

But who this author was is still uncertain. His statement about the first poem having been written by Bacon's serving-man is generally thought to be a blind to prevent reprisals. After assiduous research, some scholars believe the author to have been one John Cotton of Queen's Creek, near Williamsburg, but very little is known about Cotton other than that he was a planter. Even if the identity of the author were established beyond question, another mystery would probably remain: why did such a talented author never produce anything else?

The question of authorship, however, is relatively minor. The poems are good ones, and we reproduce them here in facsimile for the enjoyment of our readers, since the poems, especially the second one, are not often reprinted. These verses have been almost universally admired as superb examples of colonial poetry in American literature. The first has been called "the single product of sustained poetic art that was written in America for a hundred and fifty years after the settlement of Jamestown." Both poems are said to have "a depth of feeling," a "grace and ease of diction," and a technical competence unusual in the poetry of a colony, where people are usually more immediately concerned with wresting a living from the wilderness. Considering the time and the situation, they do indeed, as Moses Tyler asserted, "shed splendor upon the intellectual annals of Virginia for the seventeenth century." ✦ ✦ ✦

This second poetic epitaph for "Governor" Bacon is one that questions whether he was friend or foe, since he had brought "The Arms of Hell" into military action against the King.



Upon the Death of S: B.

Whether to Ceaser he was Friend or Foe:
Peradventure such Ignorance be your most
Can he be Friend to Ceaser, that shall bring
The Arms of Hell to fight against the King?
(Treason & Rebellion then what wisdom hates
Wee for to waste upon him to his Grave,
There is expreſs our paſſion: Wilt not be
Worſe then his Crimes to bring his Ghoſt
In well turn'd numbers, where each Eye leaves
(To his Flagitious name a flood of teares
A name that hath made fouler with foreſwearing,
Then reeched Niobe, Nought leaves ever ſhed:
A name that fild all hearts, all eares with fame,
Untill bleſt fate proclaim'd Death had him tane.
Then how can it be counted for a Sin
Though Death (nay though my ſelfe had bribed him,
To guide the fatall ſhaft: we honour all
That lends a hand unto a Tyrants fall.
What though the well paide Roſtrum ſoundly play
And box the Pulpit, into flattery;
Urging his Rethorick and ſtraind eloquence,
To adorne incoffin'd filth, and excrements:
Though the Defunct (like ours) never tride
A well intended deed untill he dide.

I will be not ſin, nor ſhame, for us, to ſay
A two fould Paſſion checker-workes this day!
Of Joy and [illegible], yet the laſt doth mute
On feete impotent, wanting ſtrength to purſue
(Nor can the art of Logick yet diſcloſe
How Joy ſhould be ſurmounted by our griefe
Yet that wee Grieve it Can not be denide,
But 'tis becauſe he was, not cauſe he dide.
So wep the poore deſtreſed Ilyum Dames
Hereing thoſe name's there Cathy put in flames,
And Countrey ruining'd; If wee thus lament
It is againſt our preſent Lawes conſent.
For if the rule, in Phiſick true doth prove,
Remove the Cauſe, th' effects will after move,
We have our ſtrv'd our ſavours; ſince we ſee
The Cauſes ſhifting of our miſerey.
Nor ift a ſingle cauſe, that's ſlipt away,
That made us warble out, a well a day.
The Braines to plot, the hands to Execute
Projected ills, Death Iountly did conſute
At his black Bar. And what no Baile could ſave
He hath commited Priſoner to the Grave,
From whence there's no reprieve. Death keep him dſe
Wee have too many Such ſhall get looſe.

The Earliest Congressional Medals of Honor

How ceremonial medals and swords, voted by the Continental Congress to honor the leaders of successful operations in the struggle for American independence, came to be fashioned belatedly in Paris by the craftsmen of King Louis XVI.

THE PROBLEM of procurement is indeed an old government problem. Even before the United States became a nation, that problem began to plague the Continental Congress. Uniforms, munitions, and supplies for the men who fought for independence from Great Britain were from the first difficult to obtain. And it developed that the medals and swords voted gratefully by the Congress in honor of victorious military leaders, even those awarded for the earliest operations, could not be delivered, with one exception, until total victory had been won.

By then Congress had adopted some two dozen resolutions of commendation and award. The first—voted on March 25, 1776, before the adoption of the Declaration of Independence—called for a gold medal to be presented to General George Washington in recognition of his "wise and spirited conduct in the siege and acquisition of Boston." But months and years went by without tangible evidence of this national appreciation.

One reason for the long postponement was the struggle for independence itself. Until the final victory was won, efforts toward that end were naturally given priority. Another reason lay in the fact that the new nation did not have artists and metallurgical artisans experienced in the designing and manufacture of honorary medals and swords. Nor, apparently, were inexperienced workmen willing to try their hands at the problem. As Moreau de Saint-Mery, a Paris-educated French colonial official and moderate Revolutionist who settled in Philadelphia as a bookshop proprietor for a few years in the 1790's, observed, perhaps both ruefully and disdainfully, "It is almost impossible to get an American to undertake a job he never did or never saw done. It took remarkable exertions on my part to get a man to make me boxes of different dimensions to hold seals."

Only one of the honorary medals was produced before the British surrender at Yorktown in 1781. The American capture of Stony Point, New York, in 1779 had inspired Congress to vote such a medal to a military leader of its French allies, the Count de Fleury. The American minister in Paris, Benjamin Franklin, reported in 1780, "I have employed one of the best artists here cutting the dies for the medal intended for M. de Fleury. The price of such work is beyond my expectation, being a thousand livres for each die." Next year the de Fleury medal was exhibited in the Royal Academy show.

But others did not follow promptly. Franklin had promised to try "to have the others done cheaper." In that hope he may have been disappointed. He was in charge of procuring the Libertas Americana medal that was ordered in 1783, and two medals in his own honor were made thereafter; but the awards for the American Revolutionary officers remained in the form of resolutions in the Congressional minute book until 1784.

Then Congress named Lieutenant-Colonel David Humphreys, George Washington's aide-de-camp, to be the secretary of a commission—its members were John Adams, Franklin, and Thomas Jefferson—to negotiate treaties of commerce between the American Confederation and other nations, especially France.

Humphreys was one of the junior officers to whom a ceremonial sword had been awarded. In the royal court at Versailles such a sword would have its uses. He sounded out Robert Morris, the Confederation's treasurer.

Morris promptly commissioned him to procure not only his own sword but all the other swords and six of the medals. They "can best be made in Europe," Morris asserted; and he requested that Humphreys "would as speedily as may be cause them to be made." Equipped with this authorization, bolstered by a letter of credit on a Parisian banker, Humphreys sailed to France in 1784.

In March, 1785, he rendered to Congress a progress report. He had made "the proper enquiries from the Characters who were the best skilled in Subjects of this nature. And having spoken to some of the first Artists, I was advised to apply to the Abby Barthelemy, member of the Academies of

London, Madrid, Contone, Pizarro & Hesse-Cassel, and actual Keeper of the King's cabinet of Medals & Antiquities, at whose instance I wrote a Letter to the Royal Academy of Inscriptions and Belles Lettres." To this report Humphreys attached a copy of his letter to the Perpetual Secretary of that body. The American had concluded that letter with an explanation why he enclosed a copy of it in another language. "Being so unfortunate as not to be able to write myself in french," Humphreys remarked, "my intimate friend and brave companion in arms Monsr. le Marquis de la Fayette has had the goodness to make a translation." Not on battlefields alone did that Frenchman win American friends.

The letter to the Royal Academy asked for "advice & sentiment" concerning what devices and inscriptions would be proper. "In addressing so respectable an assembly of Literati," wrote Humphreys with tactful politeness, "I do not think myself permitted to enlarge on the importance of this subject, because they must know much better than I can inform, in how great a degree such monuments of public gratitude are calculated to produce a laudable emulation, a genuine love of liberty, & all the virtues of real patriotism, not only among the innumerable generations who are yet to people the wastes of America, but on the human Character in general. Nor do I make those apologies for the trouble I am now giving which would be requisite, did I not feel a conviction that whatever is interesting to the National glory of America, to the good of posterity, or the happiness of the human race; cannot be indifferent to a Society composed of the most enlightened & liberal Characters of Europe, fostered by the Royal protection of a Monarch whose name will forever be as dear to the United States as it will be glorious in the annals of mankind."

In a later letter to the publisher of the *American Museum*, Humphreys gave assurance that the French scholars had "entered on the discussion with the same alacrity as if the subject had been designed to illustrate the actions of their compatriots, or to immortalize some glorious events in the annals of their own nation." The Academy's official minutes show that on April 22, 1785, four of its members were named to design the medals honoring General Washington for the taking of Boston, Major General Horatio Gates for his defeat of Burgoyne at Saratoga, and Major General Nathanael Greene for his victory at Eutaw Springs, South Carolina, in 1781. In November, 1785, three of these same French scholars and one other member of the Academy were charged with the composition of the medals for Brigadier General Daniel Morgan and Lieutenant Colonels John Eager Howard and William Augustine Washington for their respective roles in the victory at the Cowpens in South Carolina.

In May, 1785, Humphreys wrote to George Washington a description of the design developed for the medal to honor his leadership at Boston. "I think it has the character of simplicity and dignity which is to be aimed at in a memorial of this kind," the former military aide assured his commander. "You really do not know how much your name is venerated on this side of the Atlantic."

Pierre Simon Duvivier was the engraver who cut the dies for this medal honoring George Washington for his leadership in the American recapture of Boston in 1776.

The craftsman entrusted with the execution of the medal for General

Washington was Pierre Simon Duvivier, whom Franklin had previously commissioned to do the medal for the Count de Fleury. Descendant of a line of artists that could be traced back to Liege in the early years of the sev-

Augustin Dupré was the engraver who pictured John Paul Jones.

enteenth century, Duvivier later became the Engraver-General of the Paris Mint. In addition to the medal for George Washington, he etched those for Colonels Howard and William Augustine Washington.

Duvivier's work on the dies for the George Washington medal was delayed somewhat, but for a good reason. Jean Antoine Houdon visited the General at "Mount Vernon" in 1785 to procure a plaster of Paris mask and meticulously careful measurements for the life-size statue he had been commissioned by the Commonwealth of Virginia to carve from granite in yet another tribute to that outstanding hero. Houdon's materials could doubtless be used by Duvivier to improve the accuracy of his own medallic portrait of the General. "Now that there is no obstacle to commencing the medal for General Washington, since Houdon's return," wrote Humphreys on January 30, 1786, from England to Jefferson, who had become the American minister to France, "I could wish, should it not be giving you too much trouble, that you would send for Duvivier." Humphreys added that the description of the approved design was in the possession of Nicholas Marie Gatteaux, another engraver. Evidently, the medal was then cut without further incident. It is reproduced on page 10 of this magazine.

Gatteaux himself executed three of the American commissions: one from Humphreys (the medal for General Horatio Gates) and two from Jefferson (the medals recognizing the leadership of Brigadier General Anthony Wayne and of Major John Stewart at Stony Point). Though Gatteaux was an engraver of medals to Louis XVI, he survived the changes of the French Revolution to develop the process used for printing assignats, bills of exchange, and lottery tickets under the First Republic.

Augustin Dupré, the third engraver to work on orders from Humphreys, fashioned seven of the American medals during the 1780's. The two he did for Humphreys were for Generals Greene and Morgan. Later he made two honoring Benjamin Franklin, another commemorating John Paul Jones and his capture of the British *Serapis*, the Libertas Americana medal, and the Diplomatic Medal glorifying peace and commerce. He, too, survived the purges of the Revolution to become the Engraver-General of the Paris Mint, but from that position he was dismissed by First Consul Napoleon Bonaparte in 1801. His Libertas Americana medal, made in 1783, had a precursive quality, foreshadowing the Marianne of the Marseillaise and the coming French republic.

The medal for General Gates became the subject of controversy. The original design pictured Gates wearing the insignia of the Society of the Cincinnati, the officers' organization founded soon after the close of the war. Members of the Academy of Inscriptions and Belles Lettres were undoubtedly familiar with that society, because it had a large French membership. Jefferson disapproved of the inclusion. It would be an anachronism to show in a medal commemorating the victory at Saratoga the insignia of an association that did not then exist, Jefferson argued. Moreover, Jefferson discerned another impropriety in that feature embodied in the design. Congress had "studiously avoided" revealing to the public any hint whether or not it looked with favor upon the new

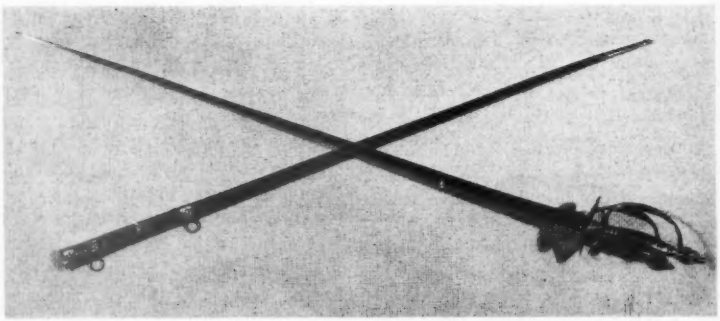
Another of Dupré's medals was the one honoring Daniel Morgan.

organization of military veterans, Jefferson recalled. To duplicate the society's insignia on a Congressional medal honoring Gates would imply "an approbation of the institution" and would force the members of Congress to consider anew whether they would present the medal at all. "I am of the opinion," Jefferson assured Humphreys, who was then in England, in December, 1785, "it would be very disagreeable to them to be placed under the necessity of making this declaration. Be so good as to let me know your wishes on this subject, by the first post."

Humphreys concurred promptly. "I never had an idea," he told Jefferson, that Gatteaux would engrave "the insignia of the Cincinnati. I clearly see the impropriety of it." Jefferson would please give the engraver definitive instructions as to this and any other questions that might arise in the course of his progress. Jefferson did. The insignia were deleted.

There were also some delays in the work on the other medals. From New York City in May, 1786, went a plea from Humphreys to Major General Henry Knox, the Confederation's chief

military officer. "Some further information respecting the number of the british killed, taken prisoners, &c. at the battle of the Cowpens will be necessary before the medal for General Morgan can be finished" under Jefferson's supervision, Humphreys declared; "it would also be very interesting for the engraver to have a good profile likeness of General Greene as he has not been able to form a strong resemblance from the miniature picture I put into his hands." When the need for accurate facts, faithful likenesses, artistic taste, and painstaking craftsmanship is considered as a whole, small wonder that transatlantic shopping encountered some delays!



Ten memorial swords were presented in behalf of Congress to American Revolutionary leaders. This one was inscribed in honor of the service rendered to the cause at Cowpens, South Carolina, by General Andrew Pickens. A descendant now owns it.

The production of the swords was completed without interruptions for more information or for the discussion and correction of anachronisms. Except for appropriate changes of names and dates, all ten would be identical. The hilts were to be of silver, Humphreys could report in his letter of March, 1785, to Congress. Enameled in gold on the hilts would be a foliage of laurel; but the central area on one side would be left smooth to receive a reproduction of the United States coat of arms, and the central medallion on the other side would carry the simplest possible inscription to identify each sword as a gift from the United States to the recipient and the date of the action for which he was honored. "The whole ten executed in this manner," Humphreys commented reassuringly, "may probably cost about 300 Louis d'ors, which is (as I have been informed) but little more than was paid for the Sword which some time since was presented on the part of the United States to the Marquis de la Fayette."

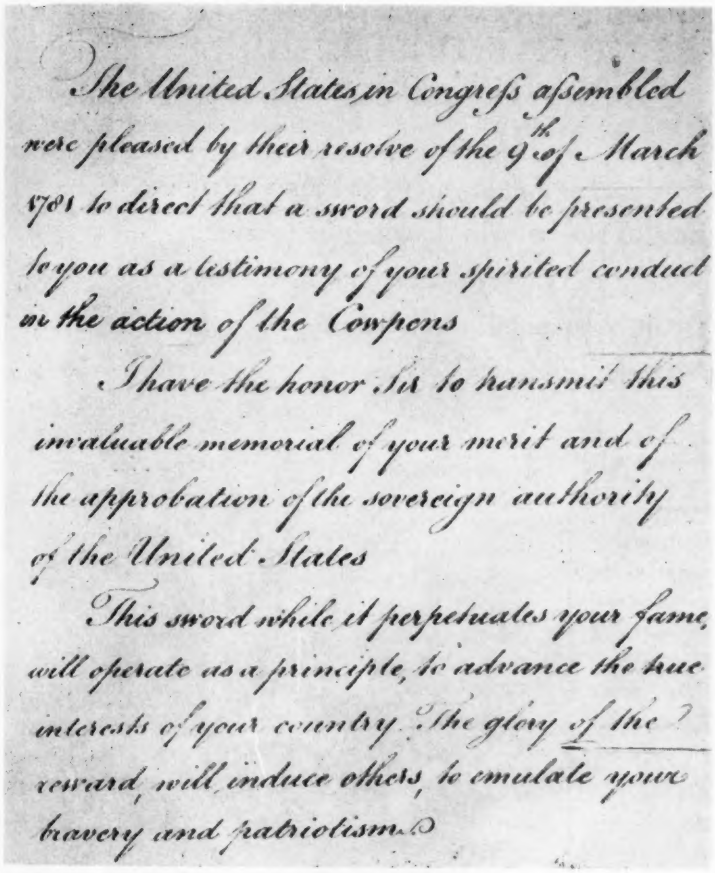
The black blades of the swords are triangular, tapered, concave; zodiac designs are traced in gold in their upper portions. The gold-on-silver relief on the hilts turned out to include not only the promised laurel but also flags, guns, flowers. Beneath the guard of each sword are hidden the initials of its maker. The scabbards are of snakeskin, with gold-on-silver mountings.

When Colonel Humphreys returned to the United States in 1786, the swords were ready. Completed under the guidance of Jefferson, the medals had to await transportation in the care of a later bearer, William Short. Humphreys forwarded the swords, together with records of his payments to their producers, from New York City to General Knox on May 22. Three days later Knox reported to Congress that he had received the ten swords. They won his glowing praise; "the design and execution," he confirmed, "are in a masterly style." Then, soon, he relayed each sword to its recipient, together with a letter comparable to that he wrote on May 27 to General Andrew Pickens, which is reproduced in facsimile on page 13.

A humorous twist can be seen in these letters from General Knox. They were written from the War Office of the United States to explain tokens of commendation for heroic actions in the rebellion against Great Britain. Yet, when held up to the light, the fine paper on which Knox wrote reveals two watermarks: the royal initials, "GR," for King George III, and the figure of Britannia leaning on her shield. Somewhere along the way, there appears to have been an unauthorized transfer of stationery.

A second mystery having to do with paper originates in the scabbard of General Andrew Pickens's sword. Because steel slides easily against paper, scabbards are usually lined with that material. It is not astonishing that the paper in the scabbards ordered by Humphreys should bear printing in French. Yet, though the swords were finished and were delivered in 1786, the scabbard of the Pickens sword was found (when it was repaired at the Metropolitan Museum in New York City several years ago) to contain French lottery paper bearing a date in the month of Brumaire, which is the name given to an autumnal month when the French Revolutionaries reformed the calendar in 1793.

Two reactions to the making of the medals, each characteristic and revealing of its author, afford a postscript to this story of procurement. On May 10, 1785, Benjamin Franklin, the thrifty American diplomat in Paris under whom the making of the medals started, wrote to John Jay, the Confederation's Secretary for Foreign Affairs. Franklin noted that the cost of the steel die for the de Fleury medal had been 100 guineas, whereas "an engraving of the same figures and inscriptions might have been beautifully done on a plate of silver of the same size for two guineas." If dies were to be made, Franklin asked, should they not be put to more than one use? "The ancients, when they ordained a medal to record the memory of any laudable



The United States in Congress assembled were pleased by their resolve of the 9th of March 1781 to direct that a sword should be presented to you as a testimony of your spirited conduct in the action of the Cowpens

I have the honor Sir to transmit this invaluable memorial of your merit and of the approbation of the sovereign authority of the United States

This sword while it perpetuates your fame, will operate as a principle to advance the true interests of your country. The glory of the reward will induce others to emulate your bravery and patriotism.

General Henry Knox of the United States War Office wrote this letter on May 27, 1786, to General Andrew Pickens. The letter accompanied the sword presented by Congress. Similar letters went also to nine other American heroes; but, whether knowingly or not, Knox wrote on stationery having British watermarks.

action, and do honor to the performer of that action, struck a vast number and used them as money. By this means the honor was extended through their own and neighboring nations," observed Franklin, and "every man who received or paid a piece of such money was reminded of the virtuous action." Copper coins were scarce in the United States. Indeed, the frugal Philadelphian remarked, "We have none but those of the King of England." So he made a suggestion. "After one silver or gold medal is struck from the dies, for the person to be honoured, they may be usefully employed in striking copper money, or in some cases small silver." Ever canny, he added a foresighted, practical hint. "The nominal value of the pieces might be a little more than the real, to prevent their being melted down, but not so much more as to be an encouragement of counterfeiting."

Likewise to John Jay and likewise from Paris, Thomas Jefferson, the perennial educator, wrote two years later that he had received from the artisan commissioned to produce the tribute to General Greene the medal itself "in gold, twenty-three in copper, and the die," Jay would please ascertain from the members of Congress their pleasure "as to the number they would cause to have struck. Perhaps they might be willing to deposit one of each person in every college in the United States. Perhaps they might choose to give a series of them to each of the crowned heads of Europe, which would be an acceptable present to them."

Transmitting his comments on these ideas to Congress on July 11, 1787, Jay proposed that each of Jefferson's hints should be improved. The proposal respecting the colleges might be enlarged; and surely Jefferson had not meant to present any of the medals to King George of Great Britain, "for it would not be delicate," or to exclude "free states from the compliment."

Congress decided to multiply the number of medals even more, although it fell far short of adopting Franklin's idea that they should become common currency. It ordered a silver medal of each denomination for every monarch in Europe other than King George, for the chief executive of every nonmonarchical European state, and for the Emperor of Morocco. Fifteen sets in silver were ordered for presentation to the thirteen American states, to "the Emperor of China with an explanation and a letter," and to George Washington. Copper copies were to go to the most distinguished non-British universities in Europe and to the Counts de Rochambeau, d'Estaing, and de Grasse. Two hundred copper sets were to be shipped to the United States for presentation to the American colleges, to the Marquis de Lafayette, and to the other major generals in the American Revolutionary army.

Today a complete set of the medals is exhibited in the office of the Director of the Mint at Washington, D. C. The United States National Museum there and the Metropolitan in New York each displays one of the ten memorial swords. ✦ ✦ ✦

An Ode to Reconciliation

James Barron Hope delivered at Yorktown in 1881 a poetic tribute to the reunited states. Thus he helped admirably to sustain the dominant theme of the victory celebration there. The occasion was the centennial of the winning of American independence.

WASHINGTON, D. C., December 16, 1880.

SIR:—*On the 19th of October, 1881, Congress will celebrate the Centennial Anniversary of the Surrender of Lord Cornwallis at Yorktown, and will lay the corner-stone of a monument to be erected to mark the spot of this decisive battle. It is especially desired that some gifted son of Virginia should pronounce a poem on that occasion, and we would respectfully invite you to perform that service, assuring you that we shall feel under great obligations to you for a favorable reply.*

We have the honor to be

Respectfully your obedient servants,

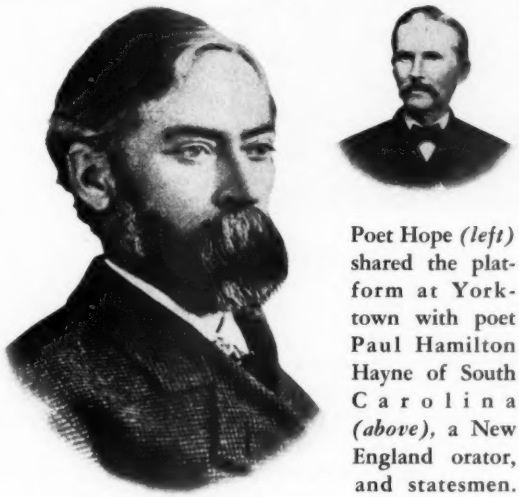
GEO. B. LORING,	*Committee*
FRANCIS KERNAN,	*on*
JNO. GOODE,	*Oration*
E. H. ROLLINS,	*and*
H. B. ANTHONY,	*Poem.*

James Barron Hope, Esq., Norfolk, Va.

THROUGH the agency of this invitation, Virginia's unofficial laureate received the distinction of being commissioned by the Congress of the United States to write a poem. We would perhaps be surprised today to learn of a poet's being asked by the federal government or any other official body to write a poem; yet in the nineteenth century it was not at all unusual for this to occur. James Barron Hope, in fact, made something of a profession of writing poetry for special occasions, and his reputation as "Virginia's Laureate" stems largely from verses he wrote for public celebrations ranging from that at Jamestown in 1857 through the unveiling of innumerable monuments and statues, down even to the opening of a theatre in Norfolk. ("And now we show no picture to offend—The Drama stands fair Virtue's fastest friend!") This is a practice

which we might well contemplate reviving, for the art of public verse, even more than that of oratory, has declined almost into oblivion.

Hope, a man who developed this art to a notable degree, was born in the Gosport Navy Yard at Portsmouth in 1829. He was a grandson of the Yard's commander, the famous Commodore James Barron. His mother was of that naval family, while his father was



Poet Hope *(left)* shared the platform at Yorktown with poet Paul Hamilton Hayne of South Carolina *(above)*, a New England orator, and statesmen.

a landowner in Hampton. Thus Hope was born to a comfortable, traditional way of life and followed the same road as most young men of his time. He attended John B. Cary's Hampton school and the College of William and Mary, graduating from the latter in 1847 at the age of eighteen. He took his A.B. in law, and after some voyaging with his naval relative, Samuel Barron, settled down to practice in the Hampton area, being elected commonwealth's attorney in 1856. During that decade he contributed verse to various journals, notably the *Southern Literary Messenger,* and published two volumes of poetry before the war. He married in 1857, and his future as a genteel litterateur seemed bright.

There seem to have been two great events in his life, both of which were violent. The first was a duel he fought in 1849, at the age of twenty, with one J. Pembroke Jones, which almost ended his career before it began. Each man was seriously wounded by the other's first shot but fortunately recovered. This experience evidently left its mark on Hope, however, for many years later in his novel, *Under the Empire; or, The Story of Madelon,* published in 1878, his hero refuses several times to meet the villain on the field of honor. "It is against the military law," he says, "and it is against my conscience."

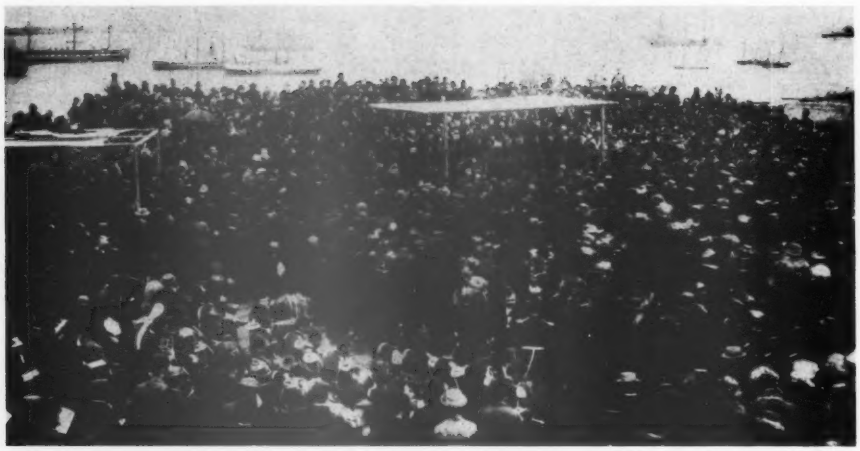
The second event was, of course, the war, in which Hope served honorably as a soldier and emerged with the rank of Captain. But the war had made a considerable change in his status. Now without money and with his health somewhat weakened by wartime experiences, he did not return to the law but instead entered journalism, first with the Norfolk *Daybook* and then with the Norfolk *Virginian.* In 1873 he became editor of his own paper, the Norfolk *Landmark,* and remained so until the end of his life in 1887.

Under the press of daily journalism, however, his verse-writing suffered, and his only postwar publications were a book of children's stories, the conventional novel mentioned above, and several official odes. Yet his journalistic ventures were successful, and he became a substantial citizen of Norfolk: superintendent of the public schools, president of the St. Cecilia Musical Society, delegate to a Democratic convention in Chicago that nominated Grover Cleveland, and a widely respected and admired orator and public figure.

Hope's poetic gifts were not remarkably generous. He could compose in the style of his time with considerable competence, but this style was unfortunately polite and dull. His work is part of a large body of conventional, genteel verse that is today quite thoroughly dead, because, as a critic in *The South in the Building of the Nation* remarks, it was defective in originality, was artistically imitative, and lacked the vitality to keep it alive. Despite this, however, certain of Hope's verses retain some interest, particularly the odes he composed for public occasions; and certainly the Yorktown Centennial Ode was one of his best.

The centennial celebration was designed to fulfill a commitment made by the Congress of 1781, which had resolved, on the twenty-ninth day of October of that year, "That the United States in Congress assembled will cause to be erected at York, in Virginia, a marble column, adorned with emblems of the alliance between the United States and His Most Christian Majesty [the King of France], and inscribed with a succinct narrative of the surrender of Earl Cornwallis to His Excellency, George Washington, Commander-in-Chief of the combined forces of America and France." Precisely why it took Congress one hundred years to get around to building the monument is not entirely clear, but at this ceremony a start at least was made by the laying of a cornerstone; the shaft itself was not completed for several more years.

The celebration had, moreover, another function.



This photograph of the speakers' stand and a part of those who celebrated at Yorktown on October 19, 1881, with ships on the York River in the background, is preserved by the Virginia Historical Society.

It served to bring together North and South in a common observance which helped to bridge the division of the recent war. In the Grand Review militia from both sections marched together for the first time since that war, and in the orations and public utterances, including Hope's poem, the keynote of reconciliation was sounded repeatedly.

Hope shared the platform on that 19th of October with many illustrious persons, including the new President of the United States, Chester A. Arthur, representatives of the French government and the Steuben family, and Virginia's political leaders. With Hope also was Paul Hamilton Hayne of South Carolina, who had been commissioned to write an ode that was set to music and sung. And not the least of the personages present was John Philip Sousa, conductor of the United States Marine Band for the occasion.

The feature of the day was a lengthy speech by the Honorable Robert C. Winthrop of Massachusetts. To that famed orator Virginian Hugh Blair Grigsby had written, "I congratulate you warmly on your election to the eminent office of orator on one of the most memorable epochs in our history," adding in the generous mood of the day, "It was fitting that the speaker should have been chosen from Massachusetts, when the scene of action was . . . Virginia." Unfortunately for poetry, Winthrop's address overshadowed Hope's poem and the Centennial Psalm of Hayne. The two large national weeklies, *Harper's* and *Leslie's*, though they devoted considerable space to the celebration itself, forgot entirely to mention Hope. However, the New York *Times* of October 20, thorough as always, reported that the poem was read "with a fine effect." Even the Richmond *Daily Whig* neglected to mention Hope, preferring to devote its space to such choice tidbits as an announcement that "Major Poe, with a detachment of police, raided the gambling saloons at Yorktown Tuesday night." The Richmond *State*, however, printed a summary of the poem with extracts and pronounced both that it was read "with fine effect" and that it had been "wrought out logically and with great care in historical illustrations."

Later commentators reported an enthusiastic reception and a high opinion of the poem's merits. It was said by one, for example, that Hope's reading "stirred the throng about him as if it had been one man" and that there was such power in his delivery that, at its close, Americans and French "pressed around him with praise and enthusiasm." Hope's daughter later quoted one of those who thronged about him as having cried out: "Now I understand the power by which the old Greek poets swayed the men of their generation." Another commentator called it "a great epic, worthy of a place among the classics of our language." And yet another, with all stops out, asserted that the poem was a masterpiece that would rank with the finest poetic productions and that Hope's poems in general were "as undying as Homer's great measures."

Despite these remarkable outbursts, Hope's poem, while perhaps not exactly fit to rank with Homer's, is an interesting production. It is doubtful if Congress knew what it was getting into when it commissioned him, because his muse, spurred to a runaway gallop, produced a poem of some nineteen sections, 210 stanzas of varied lengths, and nearly 1,000 lines—all of which must have required almost two hours to recite.

Hope cautions the reader in his preface to the poem, which is titled "Arms and the Man," that it is to be

called a "Metrical Address," this description being deliberately adopted "in order to suggest the theory under which it was constructed." In other words, "it was composed to be *spoken*, and for immediate effect, before a great assembly of the people."

The "Metrical Address," opening with a tribute to the recently-deceased President Garfield, immediately swings into a history of the American colonies. Next follows a detailed account of the Battle of Yorktown, which occupies the great bulk of the poem, with incidental tributes to Lafayette, Steuben, Cornwallis, and Washington. There follows a section on American heroes and statesmen, with stanzas on Mason, Franklin, Trumbull, Morris, Tyler, Marshall, Hamilton, Henry, John Adams, and Jefferson, and a special section devoted to George Washington. In the last part, Hope discusses the role of the South in the Union and asserts that, if the republic should ever fight again, the South will be "in the forefront of the first advance!"

The poem has certain shortcomings, to be sure. There are too much personification and classical allusion, for example; the imagery is frequently fuzzy and literary; and over all broods the muffled influence of Tennyson. It can be as bad as the following stanza:

> See that Burnt crop, yon choked-up sylvan well,
> This yeoman slain yecorven in the sun!
> My GOD! shreds of a woman's dress to tell
> Why murder there was done!

Yet it has happier moments, too, as in the following stanza, where the imagery is more genuine and concrete. Speaking of the settlers of New England, Hope says,

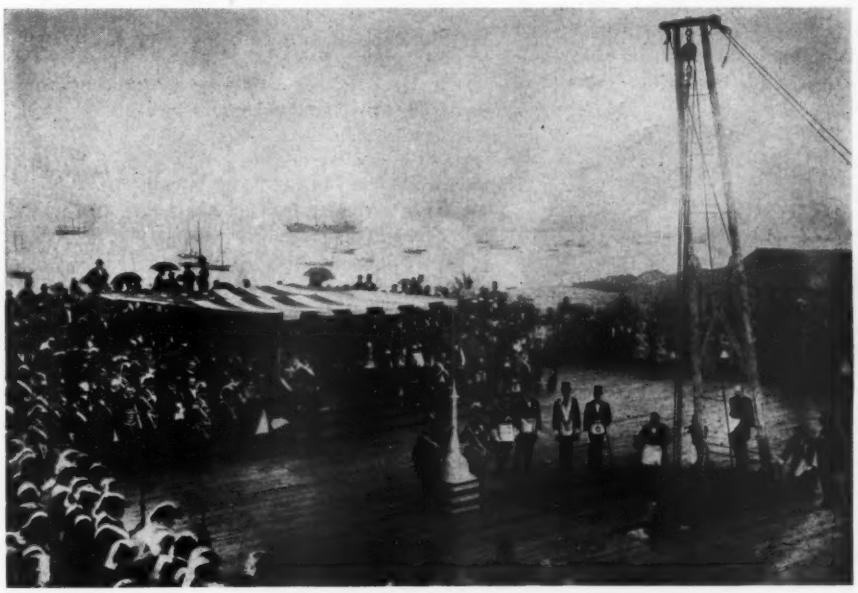
> There rose a manly race austere and strong,
> On whom no lessons of their day were lost,
> Earnest as some conventicle's deep song,
> And keen as their own frost.

Considering that this is a patriotic poem and thus in a genre not notable for effusions of genius, it is interesting and can still be effective when read aloud.

In this poem James Barron Hope did his part to refresh the memories of his audience about their common past and to extend the hand of intersectional friendship and reconciliation. The last stanza is a passionate assertion of the prevalent desire for unity:

> Give us back the ties of Yorktown!
> Perish all the modern hates!
> Let us stand together, brothers,
> In defiance of the Fates;
> FOR THE SAFETY OF THE UNION
> IS THE SAFETY OF THE STATES!

Hope's poem, in short, seems to have been precisely what was needed at the time. And this was clearly recognized by the Centennial Commission, which afterwards resolved "That this Commission tender its thanks to Captain James Barron Hope for the very eloquent and appropriate Centennial Poem, delivered by him in response to its invitation at Yorktown on the 19th of October, 1881." ✦ ✦ ✦



Another photograph preserved by the Virginia Historical Society pictures the laying of the cornerstone for the Victory Monument. This was done on October 19, 1881, a hundred years after Congress had first resolved to erect the monument.

Call to Parley

At ten o'clock on the morning of October 17, 1781, a young Briton mounted the parapets at Yorktown and, with staccato beat, drummed cessation to an era.

"MISTER" Washington—the British refused to accord him miltary rank—had devised the strategy; and his flawless, tactical implementation of it had been abetted by an amount of rare, good luck. The result of this combined skill and favoring fortune was that on September 28, 1781, he moved from Williamsburg to encircle Lieutenant-General Charles, the Earl of Cornwallis, at Yorktown. There His Lordship and some 7,500 troops were pinned down by an allied force composed of approximately 8,500 Americans and 7,500 Frenchmen. Meanwhile, a French fleet, consisting of considerably more than twenty naval ships, under the command of François Joseph Paul, Comte de Grasse, was riding in the Chesapeake—quite too formidable an array for the few British vessels at Yorktown, including two frigates (the *Charon* and the *Guadaloupe)* and three transports, to challenge. From His Lordship's viewpoint the situation was—well, awkward.

But wars are seldom contrived for the convenience of all participants; and Cornwallis was too old a campaigner to be overly concerned. From New York City he was promised that Sir Henry Clinton, His Majesty's commander in North America, would bring succor. The problem, then, was merely one of remaining in place and enduring a siege for such time as need be. And as for sieges, there was no mystery in how they should be conducted. For well over a century they had been standardized, reduced to a science by the engineering genius of the Marquis de Vauban. One followed his system. Minor problems disposed of themselves.

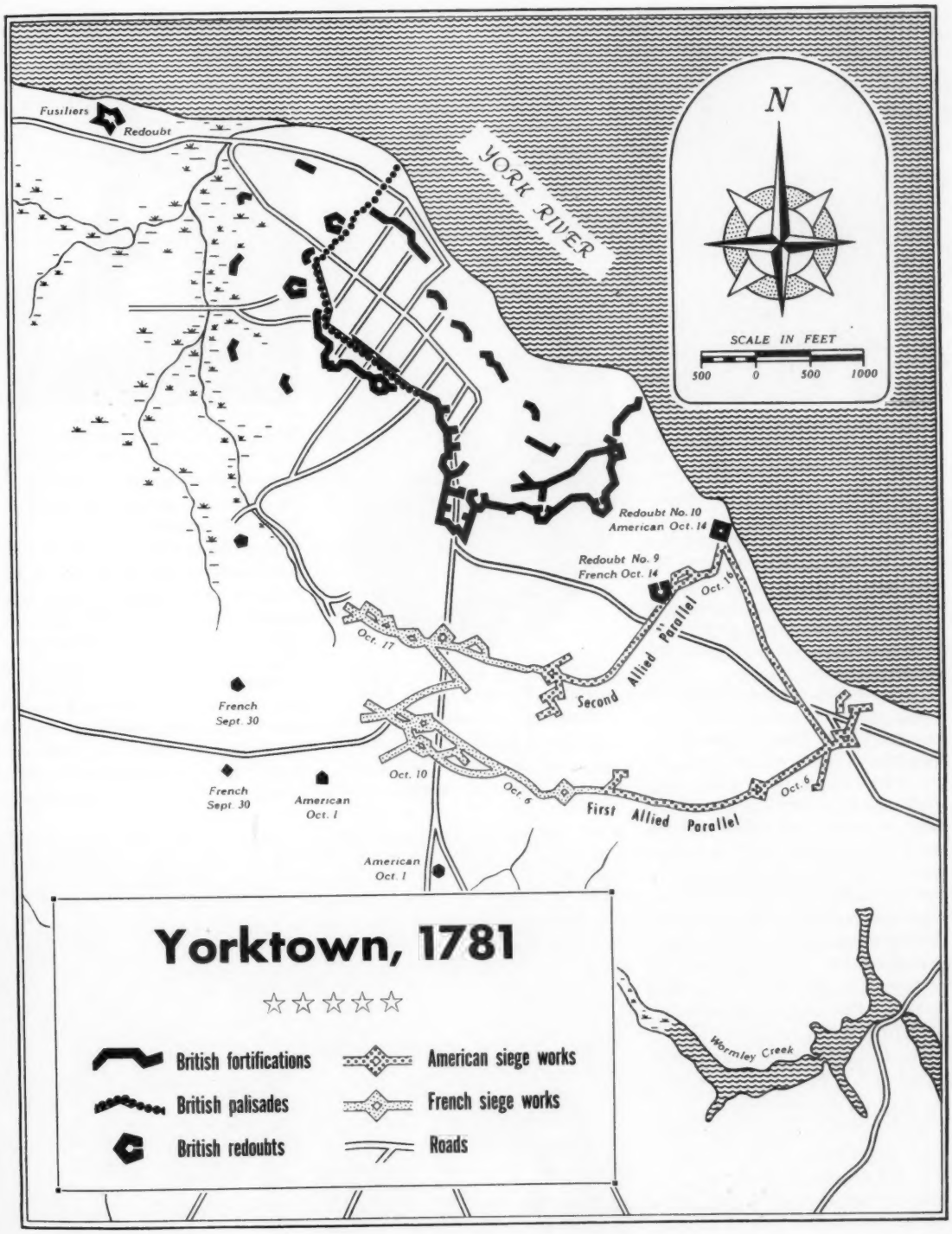
Thus the British had drawn a ring of earthwork fortifications around Yorktown, and about a mile to the northeast, across the York River, they had erected a like barricade at Gloucester Point, where nestled a pleasant village of a dozen houses. All else had they also done as Vauban would have had it. The lines of Yorktown were strengthened by redoubts—earth bastions that permitted the defense to deliver both frontal and lateral fire. Ditches before the ramparts were dug and properly scarped and counterscarped. "Fraises"—stout, sharpened stakes—were installed to protrude from the outer base of the works. And the field over which an attack would have to be delivered was cleared.

The space included within the works did not exceed 1,200 yards in length by 500 in depth. "That is not depth enough," Vauban would have said. So the engineers constructed detached outworks six and seven hundred yards beyond the inner lines. These works, flanked by swamps, commanded the roads to Williamsburg and to Hampton.

But the Marquis de Vauban had possessed a restless intellect. Once he had mastered the art of constructing

General George Washington

The Earl of Cornwallis


Fusiliers Redoubt
YORK RIVER
N
SCALE IN FEET
500 0 500 1000
Redoubt No. 10
American Oct. 14
Redoubt No. 9
French Oct. 14
Oct. 15
Oct. 17
Second Allied Parallel
French
Sept. 30
French
Sept. 30
American
Oct. 1
Oct. 10
Oct. 6
Oct. 6
First Allied Parallel
American
Oct. 1
Yorktown, 1781
British fortifications
British palisades
British redoubts
American siege works
French siege works
Roads
Wormley Creek

"impregnable" fortresses and field fortifications, he set out to determine whether he might not destroy them. He succeeded. Hence, as Cornwallis's engineers labored to render the British position secure, they understood that their American counterparts and the French auxiliaries, under command of the elegantly-named Jean Baptiste Donatien de Vimeur, Comte de Rochambeau, would be at work to make that position untenable.

Rendering a position untenable was simply a matter of tools and time. The besiegers would begin a line of entrenchments and cannon emplacements opposite the enemy's own. This might best be undertaken at night in order to lessen danger from artillery fire. Little heed need be given to musketry. It was notorious, for example, that the marksman who could guarantee to hit a haystack at fifty yards with the old, standard British "Brown Bess" smoothbore was practically a wizard.

The entrenchments were the first "parallel." From it the engineers would begin digging "approaches" toward the hostile works. An approach was always excavated in a zigzag fashion, so that for no considerable portion of its length could it be subjected to direct fire or richocheting fragments. Before them the workers would push a "sap roller," a large, circular, wicker basket capable of deflecting or absorbing projectiles. Then, the approaches having been advanced to a predetermined distance, they would be conjoined, fanning out into the second parallel. Presuming that even after this the enemy remained stubborn, new approaches and a third parallel would follow, being now so close to the enemy works that musketeers would play increasingly important roles.

Should the execution wrought from the third parallel be insufficient to cause the capitulation of the defenders, recourse would be had to deep "mining." The enemy might in turn sink shafts and countermine in an attempt to meet the new threat at its source. But eventually his works would be breached, and the issue would be determined in hand-to-hand fighting, with the bayonet a prime weapon. The outcome would, of course, be inevitably in favor of the assaulting force, for no sane commander would have attempted the reduction of a well-fortified place unless he possessed greatly superior manpower or other compelling, irresistible advantages.

Rochambeau and Lafayette *(upper left* and *right)* flank Washington while he issues orders at Yorktown *(below).* Count de Grasse *(above)* corked the bottle.

Washington inspects some of the French batteries.

Now the sanity of General Washington was a matter of public agreement; and never during the war had he been better circumstanced. Never had he commanded so many troops in the field. Never had his artillery been so much heavier and farther-ranged than his opponent's.

Yet sieges do take time, and de Grasse, though promising to linger in the bay until November 1, was anxious to be off to the West Indies. Untimely withdrawal of the fleet would mean that the web spun around the British lacked a perhaps-vital segment. Delay in pressing the work at hand could not be tolerated.

There was a busyness in the allied camps throughout the first week of October. The Americans held the right (the eastern end) of the lines, the French the left. Officers' tents were pitched. Field hospitals were erected. Artillery parks were cleared. Heavy siege guns were laboriously hauled from a landing on the James, six miles away. Twelve hundred men were assigned to special details. Some made sharp-pointed stakes. Others constructed "gabions"—wicker cylinders or baskets filled with earth to strengthen field works. Others made sandbags; others, "fascines"—sticks fastened into clusters for the bracing of earth.

But before the allies were ready for action Cornwallis gratuitously handed them a great advantage. It was his ill fortune on September 29 to receive from Clinton a message announcing that a relief expedition would sail from New York harbor "in a few days." To this sanguine statement Cornwallis replied, "I shall retire this night within the works, and have no doubt, if relief arrives in any reasonable time, York and Gloucester will be both in possession of his Majesty's troops." Whereafter retire he did, abandoning his outer fortifications, with the exception of two redoubts, Numbers 9 and 10, close to the York and at the eastern end of his lines.

Discovering the withdrawal the next morning, the allies were as delighted as they were mystified. But they did not permit mystification to impede their immediate seizure of the deserted strongholds. Cornwallis had taken what in modern military parlance would be called a calculated risk. His misfortune was that he had so singularly miscalculated as to risk everything. Had he but held his outer lines a week longer, as it seems probable he could have done, the denouement of the drama in which he was a chief actor might have been far different.

By October 6 the allies were prepared to move. Because of the nature of the terrain, the first allied siege line would be laid chiefly on the American (eastern) front. Under cover of a dark and rainy night, 2,800 guards stole out and occupied predesignated posts. They were followed by 1,500 soldiers bearing spades and shovels. Horses, hauling cannon and muffled-wheel wagons filled with sandbags, gabions, and fascines, brought up the rear.

The digging proceeded with great expedition, being made the easier by the fact that recent rains had softened the earth. The French made a strong demonstration against a redoubt on the upper edge of the town. The darkness there was perforated with fire. The redoubt was held, but this diverting action occupied almost the exclusive attention of the defenders. The next morning they viewed with astonishment enemy entrenchments so near to completion as to protect the men in and behind them.

And so it went. Before the eyes of the baffled British four new redoubts and five battery positions arose as though by magic, as though burgeoning from the earth. Cannon, for flat-trajectory fire, and mortars and howitzers, for plunging fire, were emplaced by October 9 in numbers sufficient to allow the beginning of systematic bombardment. Some of the heavier pieces were designed to discharge twenty-four-pound balls or clusters of grapeshot. The British had nothing to match them.

Accorded the honor of opening fire, the French did so about three that afternoon. Then they turned their attention to the river and sent the *Guadaloupe* to the shelter of the Gloucester side. On the American front, two hours later, it was evidently the Commander in Chief himself who applied the match to the touchhole of a cannon and sent the initial missile hurtling toward the enemy. From that moment on the net inexorably tightened. By the next day, the tenth, Washington was satisfied that his barking guns were causing "much mischief," and in visual evidence of this the French that night dropped a "red hot shot" onto the *Charon* and set her burning to the water's edge. Like disservice was done to two transports.

The British surrender of furled flags is pictured here and on page 28.

By October 11 fifty-one allied guns were in play in the first parallel and had nearly silenced the sixty-five light fieldpieces opposing them. More cannon were being hauled into the allied lines. And some three hundred yards in advance those human moles, the engineers, had started work on the second parallel. "Against so powerful an attack we cannot hope to make a very long resistance," Cornwallis wrote Clinton; and later he added, "P. S. 5 P. M. Since my letter was written (at 12 M.) we have lost thirty men."

At great personal risk, British gunners that night stuck by such cannon as still would fire. They sent shot and shell screaming toward the second parallel in a "continual blaze," which one American thought made a sight "beautifully tremendous." Yet the allied excavation continued with "amazing rapidity," and by morning 750 yards of it were completed. From it expert riflemen could make minor contributions, and the allied artillery, now emplaced to enfilade many of the British positions, would be murderous.

On the other hand, Redoubts Number 9 and 10 held out, so that the parallel could not be continued northeast to the York. In the night of October 14 they were carried by storm. The French took Number 9. The Americans, under young Lieutenant Colonel Alexander Hamilton, seized Number 10. "The work," exclaimed Washington with satisfaction, "is done and *well* done." By the following morning both redoubts were within the advance parallel.

"My situation now becomes very critical," correctly stated Cornwallis; "we dare not show a gun to their old batteries, and I expect that their new ones will open to-morrow morning."

Tradition dictated that at this juncture there should be made a sortie. At best, a foray into the enemy positions might for a while break the rhythm of his attack. At worst, it would sustain the "honor" of a garrison that was being steadily pummeled into defeat. On the morning of October 16 a desperate British charge by 350 troops against the allies' center overran a French and an American battery. In each the guns were spiked, by driving bayonets into the touchholes and breaking them off. But little benefit accrued from the gallant attempt. A countercharge drove the attackers back to their own works, with considerable loss; and within a few hours the recaptured guns were roaring announcement of their repair.

Clearly, the end was near. Excitement moved electrically through the allied lines, while so crowded did the trenches become with civilian spectators that it was necessary to issue orders to the effect that they be kept to the rear unless provided with passes.

A last chance remained to Cornwallis. Might he not emulate the Americans, who on more than one occasion had made daringly successful withdrawals by crossing rivers? Let it be supposed that he were to collect all boats available and that night transport his army, stripped of its impedimenta, to Gloucester Point; that, joining the garrison there, he push aside the allies opposite his lines (they numbered only 2,300); that he seize their horses, mount his infantry, and strike out for New York and safety.

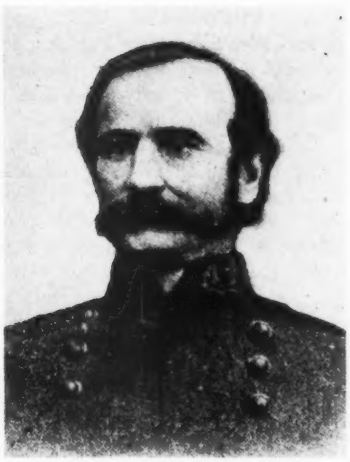
The supposition authored the attempt. But the British lacked sufficient small boats, and a midnight storm arose and drove the first of three intended echelons downstream. It was rowed back to Yorktown the next morning. Escape was not practicable.

A fateful day was October 17. Rainsoaked British troopers were relanding on the Yorktown shore. In far-off New York harbor Sir Henry Clinton was at last boarding the flagship of the fleet with which he aspired to extricate the "good Earl" from his entrapment. Did the pools of memory stir and cause Sir Henry to grimace with their brackishness? Perhaps. This was the fourth anniversary of the very day when General John Burgoyne had been forced to yield his sword at Saratoga.

A fateful day, indeed. At ten o'clock that morning the grand finale of the drama was signaled. Under cover of a white flag, a British drummer boy mounted the parapets and began to wield his drumsticks. The allied cannon fell silent, and muskets recoiled no more. All knew why he was there. He was beating the call to parley. "We at that time could not fire a single gun," Cornwallis explained. "I therefore proposed to capitulate." It remained only for the two commanders to agree upon terms and for the British to march out on October 19 to surrender their arms and colors.

In the mind's eye the boy stands there still, drumming farewell to an era. ✦ ✦ ✦

George B. McClellan



John B. Magruder

The Second Siege

In 1862 historic Yorktown was subjected to a second siege, but the results were far different from those of eighty-one years before.

ON APRIL 2, 1862, Major General George Brinton McClellan, hailed by many as the "Young Napoleon" and thought by some to be destined to become the savior of the Union (as he was careful to let his wife know), reached Fort Monroe. There he resumed personal command of the splendidly-equipped "Grand Army" that he had been drilling for months. Now he would sweep irresistibly up the James-York peninsula to Richmond, a scant eighty miles away. The soil along his route would be firm. Of this he had assured President Lincoln. And the roads would always be passable. This was according to his best intelligence.

His best intelligence was very poor.

The avenue of his proposed advance lay through a neck of land that varied in width from five to twenty miles. Where it was not sandy, the terrain was beset by marshes; and it was riddled with thick forest growths and slashed by small, tidewater streams.

Up this peninsula—few of the features of which were accurately detailed on the Federal maps—the army began on April 4 to move in two columns. The right column struck out for Yorktown, which was known to be fortified. The left headed for the Halfway House, which was understood to lie several miles northwest of the town, midway between it and Williamsburg. Possession of that strategic site would prevent the possibility of escape by the "Rebel" garrison.

The advance that day covered twelve miles and encountered no opposition. The next morning, at six, the columns were again on the move. But now they were drenched by rain. The artillery fell behind. Supply wagons bogged down. In the evening the right column sloshed to a halt before Yorktown. The left, however, did not attain the Halfway House. Instead, it encountered a stream. It was the Warwick River, which, according to the Yankee cartographers, was supposed to be somewhere else. Yet facts were facts, and just beyond the very real and very evident stream were very sobering Confederate rifle pits. There was skirmishing. This would do for April 5. Reconnaissance must follow on the morrow.

On the sixth careful inspection disclosed that in its southward course to the James the Warwick was thirteen and a half miles in length and nearly bisected the peninsula. Where ordinarily it could have been forded, the defenders had constructed dams and had covered their approaches with batteries. This river line was in turn connected with the Yorktown defenses by two redoubts, the "Red" and the "White," which were themselves joined by earthen ramparts. As for the town, his engineers reported to McClellan that it was fortified substantially by the same works thrown up

eighty-one years before by Cornwallis but greatly strengthened for modern warfare. Likewise was Gloucester Point fortified. Craft attempting to ascend the York would be subjected to a withering cross fire.

On the basis of reports and of personal examination, the "Young Napoleon" persuaded himself that the river line was defended with great power and that Yorktown was "impregnable." As a matter of bedrock fact, line and town were held by only 11,000 men, the advance guard of total Confederate forces several times larger. This vanguard was under the command of Major General John Bankhead Magruder, a native of Winchester. Magruder was conscious that should McClellan hit any part of the defenses with the 100,000 troops he would soon have at hand, there could be but one result. Yet "Prince John," as Magruder was known to his intimates, had a fondness for amateur dramatics, and he now amused himself by putting it to a more professional use, by marching and countermarching units to conceal the feebleness of their numbers.

Yorktown! In 1862 it was a drab, little village, but over the mind of the imaginative McClellan it cast a peculiar fascination. Piercing any portion of the river line would, of course, have rendered the "impregnable" stronghold militarily useless; but the General resolved to strike at the town directly. That meant a siege. Unhappily, the navy could not be called upon to participate; it was keeping the ironclad terror, the C.S.S. *Virginia* (originally the U.S.S. *Merrimac*), under observation in Hampton Roads. So 101 siege cannon were sent for and were forwarded from Washington. Once more would the ghost of Sébastien le Prestre, Marquis de Vauban, mount an eminence and watch the progression of parallels and approaches.

Finding that his opponent was by no means eager to come immediately to grips with him, Magruder requested, and received, reinforcements. In this he was strongly supported by President Jefferson Davis, who wished any major battle to be fought as far from Richmond as possible. But General Joseph E. Johnston, who was responsible for the defense of the capital, little liked the thought of commiting his army to action on the lower peninsula. Magruder's fortifications, he noted, were incomplete, and in spots were poorly constructed; the Northern artillery was superior to the Confederate; and should the Yankee navy be brought into a more aggressive role, it could land troops behind his own. "No one but McClellan," he remarked, "could have hesitated to attack."

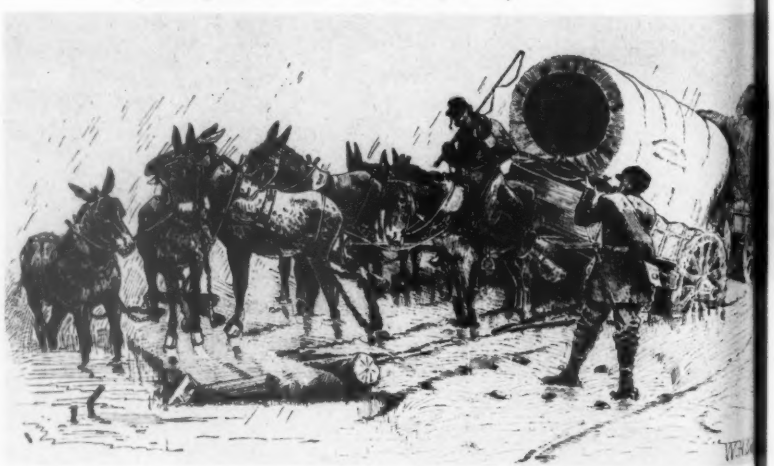
In the Union camps, meanwhile, an old story was being repeated. Some men were busy fashioning gabions and fascines; others were filling sandbags. Heavy artillery was being emplaced. This was done only with utmost difficulty, for within thirty days there were twenty during which it rained. The cannon would sink up to their carriage axles in the sodden ground, sometimes being stuck so fast that scores of men had to assist straining horses in extricating them.

The right of McClellan's first parallel rested on the York, at a point a little north of the Moore House, where the articles for the British surrender had been drafted in 1781. From there the entrenchments extended westward to the headwaters of Wormley Creek, swung southeast along the left bank of that stream, and, crossing the Hampton road, turned southwest until they were opposite the "Red" redoubt.

There was going to be much fighting in this war before soldiers, from privates to generals, learned elementary lessons. Yet already certain aspects of modern warfare were so obvious that there was no need to discover them by initial blundering. Had Washington and Cornwallis been present, they would have observed modifications in the tactics previously known to them. Nor would they have been long in determining at least one cause for modification. That cause rose from the greatly-increased range and hitting power of the artillery. Whereas, in constructing his first parallel, Washington had established it as little as six hundred yards away from the British works, McClellan's ran on an average fifteen hundred yards from Magruder's.

To mention an example of the augmented capability of artillery, the

"Get that team out of the mud!" McClellan's advance up the York-James peninsula was slowed by heavy rains.



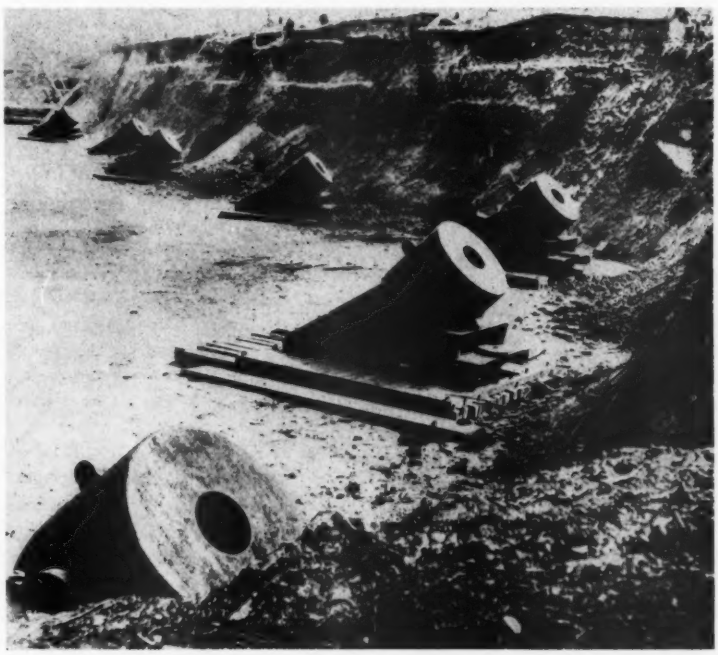
Union commander had at his disposal scores of mortars that weighed 17,000 pounds each and could hurl solid shot for two and a half miles. Or, should one care to step down to Battery No. 1, which was located in a peach orchard on the Farenholdt estate, two miles below the town, he would find monster Parrott guns. No Revolutionary, brass smoothbores were these, but cast-iron, rifled cannon, reinforced at the breech with heavy, wrought-iron bands. The largest of Washington's cannon could fire a twenty-four-pound ball. The largest of McClellan's Parrotts could fire one weighing three hundred pounds—and all the way to Yorktown.

There was another factor that contributed to the lengthening of the distance at which the first parallel was opened in 1862. It might have eluded Washington or Cornwallis at first, because it was not as eye-compelling as artillery. That was the rifle. Relatively rare as a military weapon at the close of the eighteenth century, it was standard now. It is true that in its widest use it remained a muzzle-loader; and it is true that men would grow grimy in battle from biting off the end of cartridges and pouring the greasy, black powder into the barrel. But the weapon was no longer a flintlock; it was ignited by hammer-striker and cap and hence was more dependable. It was, moreover, accurate to practically any distance at which a man could draw a bead on a target. These improvements meant that cannoneers dared not operate too close to enemy lines, unless adequately covered. The same improvements meant also that, while troops of the Revolution had to withstand only one volley before closing with the bayonet, compact, charging masses of men in this later day could literally be mowed down at a distance.

Yes, by 1862 changes in weapons dictated caution. And General McClellan was, above all things else, cautious.

Through a solid month the work progressed. "Do not misunderstand the apparent inaction here," the General pleaded with the wondering Lincoln. "Not a day, not an hour has been lost. Works have been constructed that may almost be called gigantic." True. Streams were being bridged, roads corduroyed, stockades erected to thwart possible "Rebel" sorties. Fifteen batteries, composed of a total of

An artist's sketch and a photograph picture the heavy mortars of Federal Battery Number 4. These tons of ordnance never fired a shot against the Confederate defenders of Yorktown.



Federal Battery Number 1 *(left)* fired the only artillery shell against Yorktown. The largest Confederate gun *(below)* burst and became useless in defense of the town.

seventy-five cannon and forty mortars, were being emplaced. From the yawning mouths of these engines of destruction could be thrown 175 tons of metal in a single day. Let them all be made ready, and the reduction of Yorktown would not take long.

Engineers and artillerists assured McClellan that they would be ready for bombardment on Sunday, May 4. Nor would he before that time permit individual batteries to fire, for he feared to draw counterbattery reprisals from the Confederates—though why the enemy had not already sternly challenged his construction he seems not to have inquired. The answer was that the Confederate artillery was for the most part of antiquated, smoothbore manufacture, hopelessly unequal to the contest. "We are engaged in a species of warfare in which we can never win," remarked Johnston. And, that being so, he did not intend to continue in it for long.

General McClellan permitted only one battery, No. 1, to begin its barrage in advance of the time when all would be ready to fire. On April 30 that battery dropped shells on the Yorktown wharves, where supplies were being landed; and thereafter it fired intermittently. In holiday mood and with every assurance of their personal safety, Union soldiers climbed to the roof of the "handsome old Colonial structure" that was the Farenholdt residence and cheered the work of the gunners. The Confederates attempted to reply with their largest weapon, a sixty-four pounder; but it burst, and they had no other cannon with which they could aspire to debate the issue.

By the night of May 3 there was a thrill of expectancy running through the Yankee lines. The word was around that, with only six more hours of work, every siege gun would be in place and ready. Then would follow the long-awaited "grand spectacle." Pickets reported a bright light from behind the enemy works. A "Rebel" cannon was fired here and there; but, on the whole, silence settled over Yorktown. Sitting in his tent at three o'clock the next morning, McClellan wrote that all was "so unusually still that I am a little suspicious that our friends may intend a sortie."

Dawn disclosed that "our friends" intended no such thing. General Magruder and his army had departed. And suddenly the "Young Napoleon," finding "impregnable" Yorktown in his hands, realized that he had formed no plans for pursuit of the vanished enemy. That pursuit was to take McClellan to the outskirts of Richmond.

Thus, in anticlimax, ended the second drama enacted on the same stage once occupied by George Washington and Lord Cornwallis. Never, to paraphrase a modern statesman, had so many labored so mightily to accomplish so little. ✦ ✦ ✦

John Jordan

Lucy Selina's Charcoal Era

Enterprising John Jordan and his sons developed iron furnaces in Alleghany County. Their products maintained respectable reputations amid the keen competition of the ante-bellum Virginia iron industry.

No PIG IRON has been manufactured in Virginia since the last furnace gave up the ghost during the depression of the 1930's. The bloomery forge for producing wrought iron and commercial bar iron was made obsolete by the puddling furnace and the steel mill after 1865, so that by the turn of the century only a few vestiges of that primitive industry could be found in remote Southern mountain valleys. Yet, a century and a quarter ago, iron from the Valley of Virginia was in demand on the New York market and carried credit on exchange like other staple commodities. Besides planters and farmers, the Old Dominion was producing a few industrialists, to the advantage of the commercial element in the towns. Merchants welcomed new investments and expanding trade, wholesale and retail.

Let us look brazenly over the shoulder of Bernard Peyton, commission merchant, as he sits at his desk in Richmond, writing to Jordan & Irvine of Rockbridge County on June 30, 1827: "If your Pig Iron proves of the description you mention, I have little doubt of being able to dispose of it, readily, in New York, at good prices. I am agent here, for the most extensive Iron House in that city, who are purchasers of the article, and wrote to me some 18 months ago, to engage one hundred tons for them, of the prime grey kind. As soon as you send me a sample of yours [I] will forward it to them and know what they think of it, and how much they will engage [to buy] at once."

The shipping of such a sample to intermediate and far distant markets bespoke the ironmaster's confidence in his product as well as the risk he must take to succeed. For it was a long, tedious route from Rockbridge and the neighboring counties of Botetourt and Alleghany—all of them drained by the upper James and its headwaters—downstream by bateau toward the towering Blue Ridge, through the gap in the mountains at Balcony Falls, past Lynchburg, and finally by a canal freighter beside the falls of the James to a Richmond dock. There the iron could become cargo on ocean-going ships in the coastwise trade, its destination Baltimore or Philadelphia or New York.

Ironmaking was not an entirely strange pursuit to Virginians west of the Blue Ridge in the 1820's. In the lower Shenandoah Valley the prosperous and versatile Isaac Zane had carried on his Marlboro Iron Works before the war for independence. After 1800 a few small furnaces and forges were operated spasmodically farther up the Valley, in Rockingham and Augusta counties. Wythe County became the center of a restricted but persistent industry after 1790, associated mainly with the Graham family along Reed Creek, a tributary of the New River. In the upper James River Valley the earliest ironworks were attempted in Botetourt County, but the evidence is fragmentary before 1820 and incomplete in the local records at Fincastle.

Before the mid-1820's William Weaver, a native of Pennsylvania, had become the leading ironmaster in

that county and in Rockbridge. In Botetourt he had acquired Aetna Furnace on Purgatory Creek, and he operated Union Forge jointly with Thomas Mayburry, who also became well known in the industry of that region. In October, 1825, Weaver invested in the Bath Iron Works, south of Lexington in Rockbridge County; and Buffalo Forge was built for him in 1828 at the mouth of Buffalo Creek, where the North River (since renamed the Maury) afforded a thoroughfare to its confluence with the James. At this forge Weaver, the transplanted Philadelphian, established his home. In later years he called it affectionately "my old Buffalo Place."

In so isolated, rural a society ironmaking began as an auxiliary of agriculture to meet local needs with local resources. It was born of mechanical ingenuity, which certain residents found they could apply successfully to hitherto untried occupations. Under primitive conditions the forge, for making wrought iron direct from the ore, usually *preceded* the furnace. The bloomery forge was an adaptation of the blacksmith's forge, familiar to every farmer; but it required special skill in heating and hammering, and the output was very limited, however fine its quality. Yet the forge also *followed* the furnace, for the furnace produced pig iron, and that had to be transferred to a forge for the refining process of heating and hammering and shaping into bar iron or into tools, implements, and other articles for consumers.

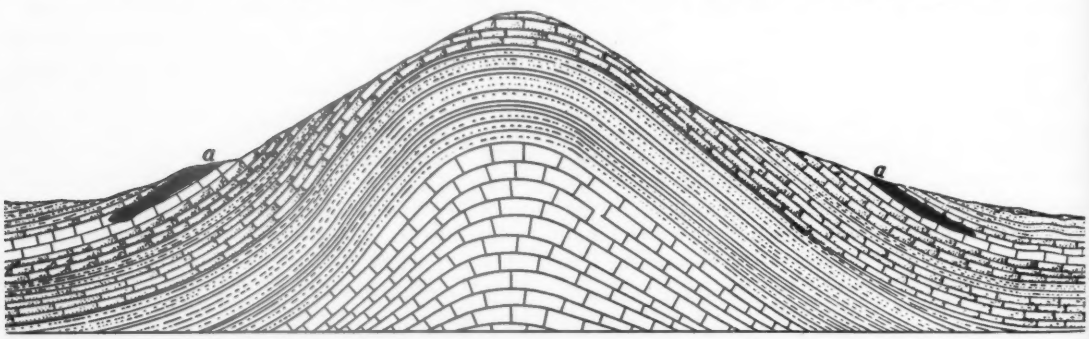
Hence, except under most primitive conditions, ironworks usually consisted of a furnace and a forge operated in close proximity to each other if water power and the timber supply for charcoal permitted. Transportation facilities might be a more weighty consideration than the location of raw materials, and the best power site for blowing the bellows commanded high priority. Pig iron of the right quality, direct from the furnace, could be used for making cast-iron goods like firebacks, andirons, kettles, and other utensils.

The ironmaster with a more commercial outlook, however, hoped his "pigs" would be in demand for conversion into cast-iron products or into bar iron; and if he made bar iron at his own forge, its value as commercial credit among merchants and bankers was a prime consideration. In an expanding economy, like Virginia's during the second quarter of the nineteenth century, an enterprising manufacturer was able to extend his business quickly beyond local markets.

The partnership of Jordan & Irvine, not the pioneer undertaking in the iron industry west of the Blue Ridge, should be regarded as a calculated venture by thoughtful men; their previous experience in business and observations of ironmaking establishments already in operation led them to conclude that opportunity existed for profits in competition with William Weaver's going concern. Beyond Virginia's borders, the years 1825-1830 were a period of prosperity, with expanding markets and easy credit, readily felt among traders in Richmond and Philadelphia and communicated to those in remote areas who kept fingers on the pulse of the nation.

John Jordan and John Irvine of Rockbridge County typified the hard-working, forward-looking, Scotch-Irish people of the Valley. By the early nineteenth

This drawing pictures the geological strata likely to be found under the surface of Virginia's mountains. Upward thrusts long ago account for the Valley's frequent outcroppings of iron ore, shown by the letter "a." The Jordans mined brown hematite on the east side of Brushy Mountain.



A Philadelphian answered in 1827 a request for information about iron-furnace design. He advised the Virginia inquirers how to build both a stack and a bellows house.

century the effects of such settlers' cultural heritage and creative ability were clearly evident in the material progress of the community and in the fact that Washington College was already deeply rooted in the village of Lexington, the county seat.

As a young man, recently married, John Jordan migrated from Hanover County about 1802 to the "near west" of Rockbridge. His dynamic personality quickened the spirit of the community; his enthusiasm for new investments was contagious. During the next twenty years he developed grist mills and weaving shops, and he was the contractor for various public buildings in the county. He and his wife raised a large family. His numerous sons grew up to become associates in many of his enterprises. The Jordans—loyal Baptists in a Presbyterian stronghold—also contributed to the spiritual welfare of the community.

Colonel Jordan's construction work led him into such other public works as road building and river improvements. In partnership with John Irvine, of the prolific Scottish family of Campbell, Rockbridge, and adjacent counties, Jordan was engaged in 1825 in constructing a better channel for bateaux through Balcony Falls. The partners were also involved in the river freighting business, supplementing and to some extent replacing tedious and more costly wagon transport.

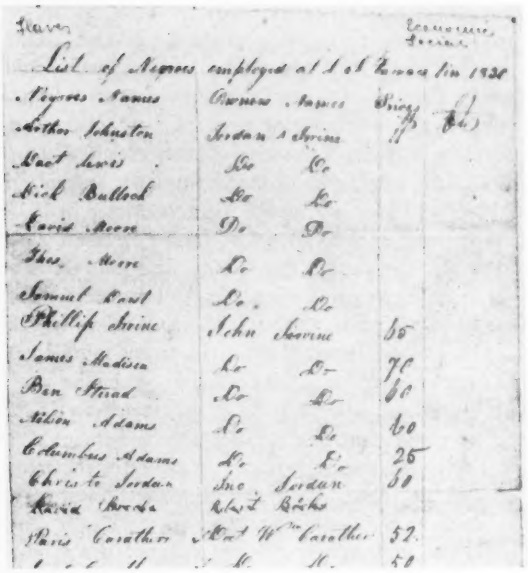
Since their shipments included iron products of Botetourt and Rockbridge, it is no wonder that the next venture of Jordan & Irvine was in ironmaking. They were well acquainted with the natural resources of the region; local iron was already being manufactured successfully; and as shippers they were facilitating its sale and delivery. Why not seize the opportunity to become also producers of the needed metal?

In Alleghany County, where the Cowpasture and Jackson rivers meet to form the James, Jordan & Irvine acquired several thousand acres of land containing promising deposits of brown hematite ore. On Simpson's Creek, a tributary of the Cowpasture, and in the eastern end of the county the partners erected in 1827 their furnace. It stood between North Mountain, atop which ran the Rockbridge County line, and Brushy Mountain. Typically, the builders doubtless named the furnace for their wives, Lucy Jordan and Selina Irvine. On the Jackson River, about eight or ten miles from the furnace, they built the Clifton Forge in the same year. Although Alleghany County, created in 1822, was largely an untamed wilderness, the furnace and forge were located on streams navigable for the most part and providing links in the most direct, most practical route to the outside world.

Lack of technical knowledge did not deter bold entrepreneurs with credit at their command and the wherewithal to engage the services of a skilled furnaceman or forge-man. As a Pennsylvania ironmaster wrote to Jordan & Irvine while their works were under construction, "Any knowledge I possess in the Furnace business I have acquired from experiance [*sic*]." Industrial operations for the conversion of mineral resources were then still characterized by trial and error, preceded by no "systematic geological and chemical examination." Thus commented Director William Barton Rogers of the first Virginia Geological Survey, 1835-1836, on the rule-of-thumb efforts of the typical pioneering Virginia ironmaster, who was in most instances unaware of the geologist's analysis as a valuable source of information.

No graphic record or description of Lucy Selina Furnace in its ante-bellum days is extant. It was undoubtedly a stone stack, perhaps not more than thirty feet high, to judge by others in the South at that time. The ore, fuel, and the limestone as a fluxing agent were fed into the furnace from the top; combustion and smelting were induced by cold-air blast from bellows operated by water power. Charcoal was the traditional and only fuel, preferred for its high carbon content; coal and coke were not used in the Virginia iron industry before the Civil War. The ore and fuel had to be hauled to the furnace, the latter from ever greater distances as nearby acres were rapidly denuded of their timber.

From the viewpoint of today's experts, efficiency in



Thirty-eight Negro slaves, some by hire, worked at Lucy Selina Furnace in 1830.

the use of raw materials was not usual in Virginia blast-furnace operations of the ante-bellum period. Three tons of ore yielded only one ton of pig iron, though the ore dug from Jordan & Irvine's mines assayed about fifty percent iron, and Lucy Selina's appetite for charcoal was ravenous. Considerations of economy as well as demands of the market kept the furnace in continuous operation for months, if no repairs were required. The rhythmic blowing of the bellows, the smoke and sparks from the top of the stack, the red glow of the molten pig iron flowing through sand troughs to form castings, made an indelible impression on the community and gave many a furnace-man nostalgia for its sights and sounds when he was removed from them.

In 1831 the firm of Jordan & Irvine, including two sons of Colonel John Jordan, Edwin and Ira F., owned forty thousand acres of land, "on which is erected a compleate set of Iron works, which are now in full operation." The Clifton Forge property consisted of the forge house with two hammers, one chafery (that is, warming) fire, and six refinery fires; another small forge with one hammer and two chafery fires; a charcoal storage house; a sawmill; and a "manufactory" (grist mill). Some of the pig iron made at the furnace was taken to the forge for reheating and hammering into bars, a staple commercial product. As the list of forge equipment indicates, the charcoal supply was provided on the spot, and sufficient power was available also to grind corn needed for subsistence by the laborers.

The operation of the Lucy Selina Furnace required a coal house, bridge house, bellows house, and pot house for castings. Also there, as at the forge, were a sawmill and a grist mill. The latter was intended only "to do the grinding of the establishment," the owners explained in an 1831 letter, "as the Furnace is scituated [*sic*] so as to preclude the expectation of getting any grain to grind for Toll." Furthermore, the letter mentioned "a quantity of arable land valuable for pasture."

Nor had the age-old system of barter become obsolete for meeting the ironmaster's needs. On one occasion Jordan & Irvine declared: "Our rule is when we exchange castings for country produce . . . we expect the articles at the time the castings are delivered as those articles most of them [are] such as our hands about the Furnace need, and we therefore meet sale for them immediately." Although the partners' economic and social ties were primarily with Rockbridge County, a "dwelling for the proprietors" at the furnace and another at the forge seem to imply that some of the Jordan associates were at least occasionally in residence.

Slave labor was an essential factor in the operation of the iron works. Since white workers were generally scarce, the ironmaster depended upon the Negro to fill most of the jobs except those of manager and bookkeeper. He discovered that certain slaves were adept at technical work and could be trained to perform skilled operations very satisfactorily. When slaves for hire were plentiful in Virginia, the industrialist found it cheaper to contract for laborers by the year than to own them outright as a capital investment.

Such was the situation at Lucy Selina Furnace. In 1830 only six slaves there were owned by Jordan & Irvine, in contrast to thirty-two who had been rented for the year from other owners at prices ranging from about $45 to $60. Demand for labor in turnpike and water transportation projects was sharpening the competition for slave labor contracts. The ironmasters hired slaves through agents at considerable distances in other parts of the state. The Christmas season was the customary time for owners to make new labor agreements and to renew old ones. Davy, John, and Charles, to cite a provision in a typical contract, were

"to be cloathed and taxes paid in the usual manner with a hat and a blanket." And the agent added a stipulation: "Davy says that working in the furnace is Injurious to his Eyes, therefore I do not Wish him to work there against his will." Thereafter, we guess, Davy cut wood or made charcoal.

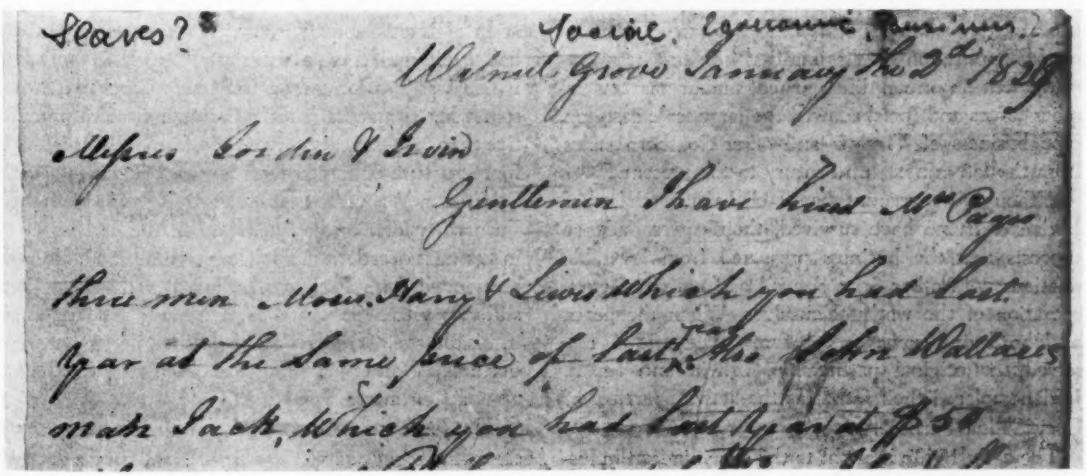
From the Clifton Forge the same year further light is shed on slave labor and its diversified character. Of the fifty-four hands employed only twelve were owned by the partners jointly or individually; the rest were hired at average rates, except the man whose skill in "drawing" the iron into shape made his services worth $150 per year. The other slaves included twenty-two who were engaged in wood chopping, three who hauled wood, three who were called wagoners, seven who were kept busy in "Coaling" and four in "Refining," two who kept stock records, one employed in some kind of shop, one boatman, one house servant, two cooks, and four who were classified as supernumeraries.

The distribution of labor shown in this list indicates the importance of fuel as a factor in the economy of forge operations. Cutting and hauling wood to the coaling grounds were a pressing need, and the conversion of wood into charcoal before the days of the beehive oven or kiln required not only close attention but also a "black thumb," so to speak, to produce the best fuel with a minimum of waste. Sometimes ironmasters contracted with white workmen to dig and haul ore to the furnace and to chop wood and make charcoal. Slave labor, however, could be used seasonally in customary agricultural pursuits when it was not needed for the iron works—for example, to grow corn.

As one would expect of such enterprising businessmen as Jordan & Irvine, their ambition for successful ironmaking was not limited to consumption through local markets. They could sell some castings and utensils at the furnace and some wrought iron tools and other goods at the forge, for cash or barter. From their business contacts with merchants in the commercial centers of Lynchburg, Petersburg, and Richmond, however, they sensed the growing demand for standardized products, especially pig iron and bar iron. Jordan & Irvine found commission merchants eager for new business.

We have seen how Bernard Peyton of Richmond encouraged the partners at the outset of their venture by offering to use his connections in New York for marketing their iron. In November, 1828, Peyton's agent, John F. Caruthers, was there seeking customers for Lucy Selina iron. He reported that in general the commodity had been selling very low, "unless it is Pig Iron whose character is *established* for Making Castings. I find there is no such thing as selling Pig without its character is known." Burns Trimble & Company, to whom most of Jordan & Irvine's iron had been consigned, "said I might draw on them to the amount of $1200 on a/c of the Pig Iron at eight months. . . . They have agreed that the Iron shall not be forced into market but sold on the usual credit

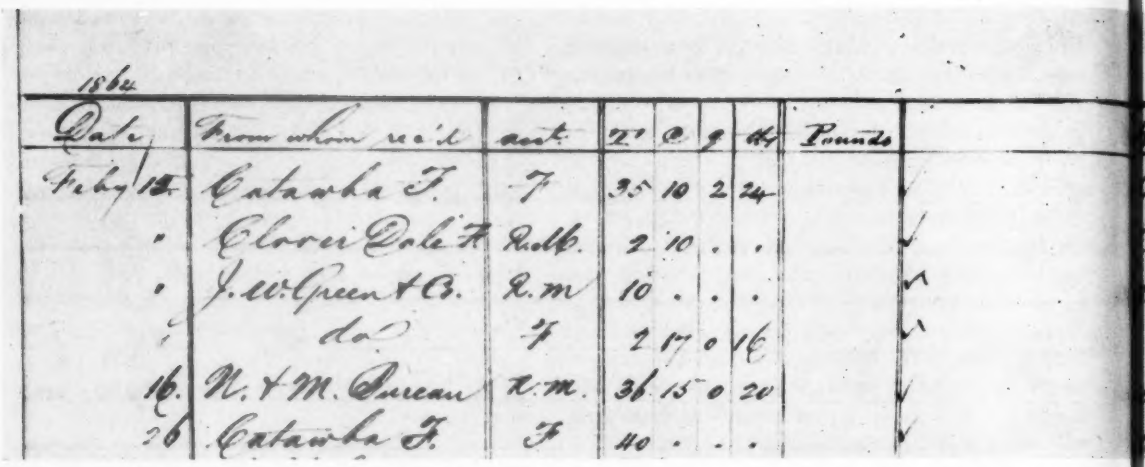
An agent reported to the ironmasters in 1829 that he had rehired three of Mrs. Page's slaves for the new year at the same price as for 1828. He also reported making other slave-labor contracts.


Slaves?

Walnut Grove January the 2d 1829

Messrs Jordan & Irvin

Gentlemen I have hired Mrs Page's three men Moses Harry & Lewis which you had Last Year at the same price of Last Year Also John Wallaces man Jack, which you had Last Year at $50



1864

Date	From whom rec'd	amt.	T	C	Q	lb	Pounds	
Feby 13.	Catawba F.	F	35	10	2	24		✓
"	Clover Dale F.	Rolls.	2	10	.	.		✓
"	J. W. Green & Co.	R. M	10	.	.	.		✓
"	do	F	2	17	0	16		✓
16.	N. & M. Bureau	R. M.	36	15	0	20		✓
20	Catawba F.	F	40	.	.	.		✓

An entry in the records of the Tredegar Iron Works in Richmond shows the receipt on February 16, 1864, of more than thirty-six tons of pig iron from the Confederacy's Nitre and Mining Bureau.

which is 6 months." While Virginia iron was well known in Northern markets, each ironmaster had to establish his own reputation in the face of stiff competition.

The merchant's commission varied from two and a half to four percent, depending upon his know-how and prestige in the more lucrative markets. Freight charges, insurance, storage, advertising, and commissions increased the cost of the ironmaster's product, so that his net profit was very sensitive to fluctuations in the market. Yet the widening demand for iron products stimulated the Virginia industry, which by the 1830's had a worthy reputation to maintain. A new demand appeared in local markets when iron pipe was tried for city water conduits in Lynchburg. That successful application of Virginia cast iron to a new improvement in urban life opened similar markets in other towns and foreshadowed the large-scale cast-iron pipe business of Virginia and other Southern states from the late nineteenth century to the present.

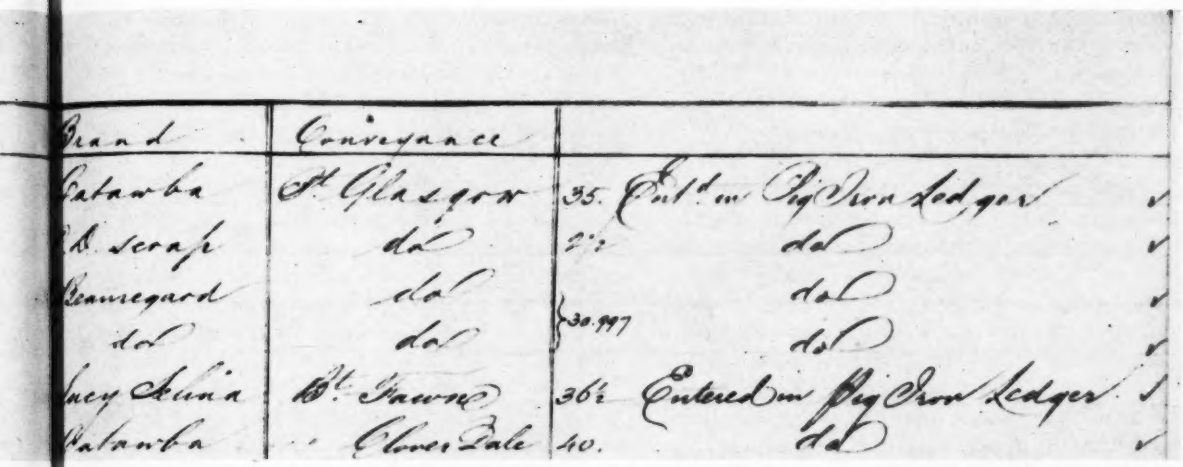
Although no account books or balance sheets of Jordan & Irvine have survived, their correspondence suggests that the business prospered from favorable relations with other firms as well as from satisfactory operation of the works themselves. When the death of John Irvine, some time before August, 1834, dissolved the original partnership, Edwin and Ira F. Jordan replaced their father as the active operators of Lucy Selina Furnace.

The early 1840's brought to the Virginia iron industry a period of recovery from the hard times precipitated by the Panic of 1837. Two technical improvements were gradually introduced. Steam engines replaced water power for pumping air into furnaces. The use of unheated air gave way to the more efficient hot blast. These innovations led to the rebuilding of some furnaces and to the construction of new ones of larger dimensions.

Keeping up with the times, B. J. Jordan & Company built in 1848 a new, hot-blast installation, Dolly Ann Furnace, a few miles east of Covington, the county seat of Alleghany. Edwin and Ira F. Jordan, likewise, recognized that the old could not compete with the modern. In 1852 they discontinued the operation of Lucy Selina Furnace. Within two years they had built and fired a substitute, Australia Furnace, which was also located on Simpson's Creek but stood somewhat nearer its mouth. Larger and more productive than its predecessor, Australia Furnace was a forty-foot structure equipped with hot-blast facilities.

William Weaver was still competing with his Aetna Furnace, which he had enlarged in the early 1840's; in the next decade it included a machine shop. He had abandoned Bath Iron Works, but Buffalo Forge was still very active. So was Weaver himself, who reflected in his old age, "Training alone will not do [in the iron business]. Nature must do something in order to make a good Iron master."

The Jordans in Alleghany County saw several new competitors in Botetourt and Rockbridge counties enter



Brand	Conveyance		
Catawba	Ft. Glasgow	35. Entered in Pig Iron Ledger	✓
Cl. scrap	do	2½ do	✓
Beauregard	do	do	✓
do	do	30.997 do	✓
Lucy Selina	Ft. Fawn	36½ Entered in Pig Iron Ledger	✓
Catawba	Clover Dale	40. do	✓

The same record indicates that the consignment of pig iron shown on page 36 had been smelted at Lucy Selina Furnace and that it had been brought to Tredegar by a company-owned boat, the *Fawn*.

the field during the last fifteen years before the Civil War. These included Buena Vista, Glenwood, Grace, and Mount Hope furnaces. They had a distinct advantage in being nearer Richmond, the only market to which or through which the Jordans could hope to deliver at a profit large tonnages of pig iron. The fact that railroad trains were beginning to serve Lynchburg and Staunton by 1852, when Lucy Selina went out of blast, decreased not one whit the difficulties of shipping iron from any furnace in the three counties.

The same cannot be said, however, of their outlet by water. The over-ambitiously named James River and Kanawha Canal reached its ultimate, most western terminus at Buchanan in Botetourt in the same year, 1852. Its branch up the North River to Lexington in Rockbridge was completed several years later. Canal freighters, larger than the bateaux of yesteryear, afforded the ironmasters of those two counties better service in sending their iron to Richmond buyers than those producers had ever known. But the completion of the canal served only to increase, at least comparatively, the remoteness of Lucy Selina, Dolly Ann, and Australia furnaces in Alleghany. Their pig iron would still have to be floated in small craft down the Cowpasture or Jackson to the James and then down that stream to Buchanan; there each load would have to be transferred to a canal freighter. In contrast, iron from such a more favorably located hearth as that of Cloverdale Furnace in Botetourt was wagoned seven miles and then was simply loaded into a boat for delivery directly to the famous Tredegar Iron Works in the capital, located beside the canal.

Lucy Selina's proprietors may have suffered another disadvantage as well. The quality of the iron they produced at Australia Furnace did not maintain top rank in the opinion of at least one important customer in the year 1860. Joseph R. Anderson of the Tredegar then paid $35 to $42.50 per ton for all the iron Cloverdale Furnace could smelt. Indeed, for ten years he bought its entire output, which averaged about 1,100 tons annually. For Glenwood iron he paid $30. Pig from Australia and Buena Vista was worth only $28 per ton to him. Pennsylvania iron smelted with fuels other than charcoal was cheap. To each Virginia charcoal ironmaster an individual reputation for quality was all important. Amid such competition, it could be disastrous to lose face.

Many a Virginia furnace-man learned that lesson the hard way in the several years before and after 1850, when local and national conditions in the industry were changing rapidly. A compilation by J. P. Lesley in 1856 enumerated eighty-eight charcoal furnaces that had been built in thirty-one Virginia counties during the previous half century. Only thirty-nine of them, he reported, were in operation or were prepared to make iron. Australia Furnace was one of the thirty-nine, Lucy Selina one of the other forty-nine.

The coming of the Civil War enhanced Australia's usefulness and restored Lucy Selina's. Joseph R. Anderson, already a veteran maker of munitions, found

himself the most vitally important manufacturer in the industry-starved Confederacy. Versatile Tredegar's products were needed as never before. To Tredegar the Confederate artillery looked for cannon, and Anderson had repeatedly proved the superiority of Virginia charcoal pig iron in the making of big guns. To Tredegar the Confederacy's railroads looked for rails and rolling stock.

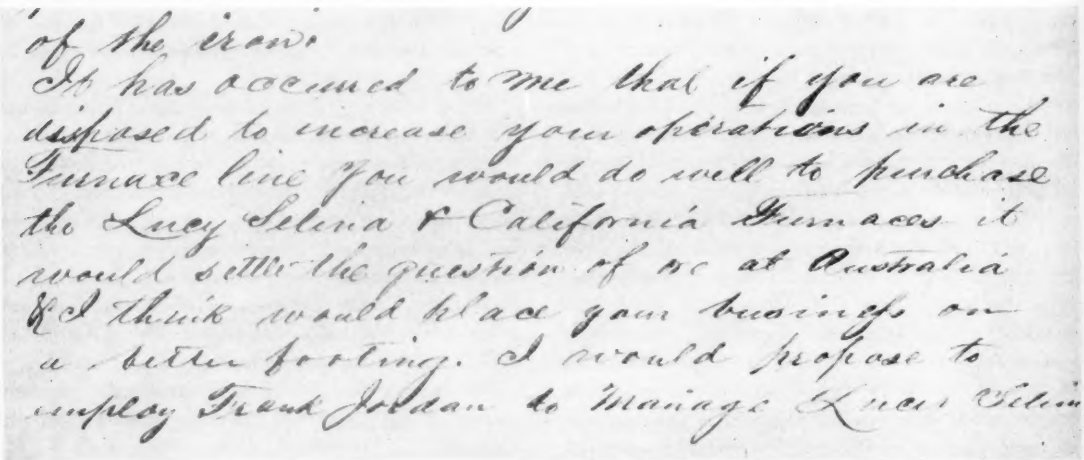
Himself a Rockbridge County furnace-man who had gone to Richmond more than two decades earlier to enter another branch of the iron industry, Joseph R. Anderson depended upon former and new suppliers in Virginia's Valley for the pig iron without which Tredegar could not serve the cause. By the end of January, 1863, his firm controlled and operated nine blast furnaces. Six of these it owned outright. Five of these six, including Cloverdale, were in Botetourt County, reasonably near the vital canal artery. The sixth was Australia Furnace. In charge of these six iron-making facilities Anderson placed F. T. Glasgow, who made his headquarters at Buchanan. Glasgow's letters to Anderson, now at least partially preserved among the Tredegar records in the Virginia State Library, make occasional references to Australia and Lucy Selina furnaces.

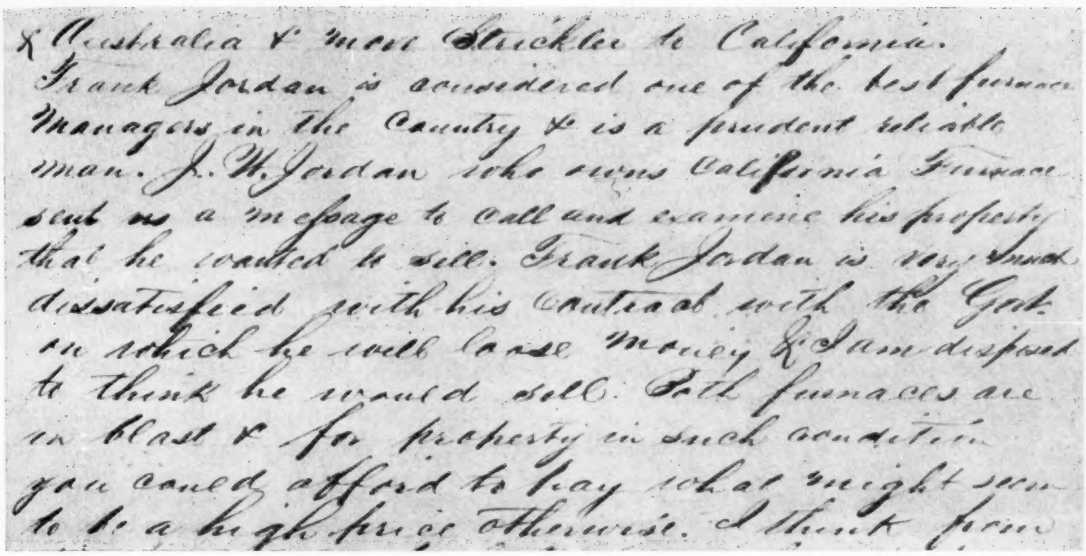
"I hope you have succeeded in selling Australia," Glasgow wrote early in January, 1863. One Sam Campbell there, he supposed, had "plenty of means to carry on the business. I think Rebecca Furnace [in Botetourt County] a far better investment." Late in the next month Anderson went to see Australia Furnace personally—but, contrary to his plan, without Glasgow. The latter could not meet Anderson at the appointed time and place and then was prevented from proceeding directly to the furnace by streams that were flooded so deep that they could not be forded.

General Anderson bought Rebecca, but he did not sell Australia. Several weeks later Glasgow visited Simpson's Creek. He had hired a manager for Australia Furnace at an annual salary of $1,200. No longer lukewarm to that more remote operation, he was eager to revive its lapsed production. "It is very important that the furnace should be put in blast as soon as possible," he assured Anderson. The mining of a supply of ore estimated to be sufficient for a year had already been begun at an old ore bank about a mile from the furnace. Eighteen mules and horses were already there, but Anderson must see to it that twenty-five more were made available to haul the ore, limestone, and charcoal needed by the new manager and his associates. "I think they will be ready otherwise," Glasgow told Anderson, by the time the additional teams could be dispatched.

In July, 1863, a new problem loomed in Glasgow's mind. "I don't know what your plan is for transporting Australia Iron," he reminded Anderson. "If it is to come down the river, it will require for this & Rebecca Furnace 10 to 12 additional boats. I fear it will be impracticable to procure hands for so many & if you find any other practicable route for the Aus-

On June 23, 1863, F. T. Glasgow, Anderson's agent, advised him to buy Lucy Selina Furance and another one. The agent proposed that Frank Jordan be retained as manager of Lucy Selina.


of the iron.
It has occured to me that if you are disposed to increase your operations in the Furnace line you would do well to purchase the Lucy Selina & California Furnaces it would settle the question of no at Australia & I think would place your business on a better footing. I would propose to employ Frank Jordan to manage Lucy Selina



Frank Jordan is quite dissatisfied with his government contract for Lucy Selina iron. Prudent and reliable, he is considered one of the best furnace managers. So wrote Anderson's agent.

tralia Iron you had better adopt it" immediately.

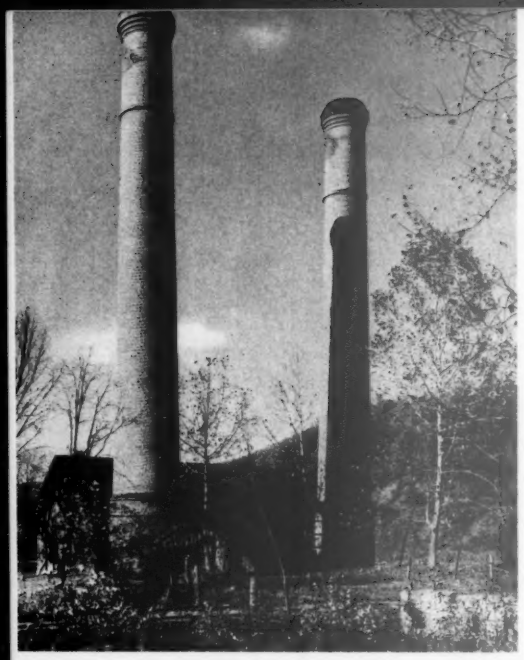
Evidently there was no other practicable way. Tredegar's later records acknowledge the arrival at the Richmond docks of canal shipments of iron from Australia Furnace. It did yeoman service until the military debacle of 1865 halted all the company's business. In an itemization of the Tredegar properties, later that year, that furnace was valued at $15,000—a sum $5,000 smaller than the lowest among five other furnaces. At $40,000, Cloverdale led the list.

Lucy Selina's wartime experience was somewhat different, but alike in that the isolation of Alleghany County proved troublesome. Evidently under contract or lease, Lucy's product, or most of it, was sold to the Confederate States Nitre and Mining Bureau. That agency sent it to Tredegar for conversion. A sampling of the company's records reveals, for example, twenty-four consignments totaling more than 475 tons within fourteen months of 1863-1864.

When Glasgow returned from his trip to Australia Furnace, he informed Anderson that "maybe about 225 tons" of Lucy Selina iron lay stockpiled approximately three miles above the mouth of the Cowpasture. That was in April, 1863. By early May, Glasgow reported, he had sent five boats up the James and Cowpasture to bring down that supply of pig. "It is a considerable job," he commented, "as I have had to send teams there & haul it 1½ miles lower" to get it into the boats. Late that month one of the Jordans had counted more than 167 tons that had been floated; but only half of that amount had yet reached Buchanan. Two months later Glasgow was writing to explain a shortage of several tons between the weight he thought he had relayed and the weight received by Anderson.

In that same month, July, 1863, Glasgow talked with J. W. Jordan about a possibility that Anderson would buy Lucy Selina or at least the ore bank nearby. "I have no doubt you will hear from him," Glasgow concluded in writing to Anderson of the conference, "as I think he wants to sell." But J. W. Jordan's brother was also involved, and for one or more reasons nothing came of the idea.

Yet Lucy's days as a Jordan property were numbered. Her story in the postwar years is told in the succeeding article. The contrasts between the two eras of the Virginia iron industry are striking—between partnership and corporate organization, between charcoal furnaces of small capacity and coke furnaces of larger scale, between leisurely water and faster rail transportation. In sum, all the factors of size, speed, efficiency, and economic integration would make obsolete a profitable and picturesque industry of the Old Dominion's agricultural economy within a few years after Appomattox. A new generation was to take over. ✦ ✦ ✦



Lucy Selina's Coke Era

Two tall, neglected, but durable chimneys beside Route 60 at Longdale suggest, in epitome, the transitions in the manufacture of pig iron in post-bellum Virginia.

More characteristic of Virginia iron making through 1865 than atypical was Lucy Selina Furnace. (See Lester J. Cappon's article on preceding pages.) But John Jordan and his sons doubtless never dreamed that their pride, which was not always a joy as well, was destined to become after the war the pioneering leader among Virginia furnaces. Their serviceable stack was to be converted. The results contrasted sharply in every respect with the iron industry they knew. Like their contemporary Virginia ironmasters, they used charcoal as their fuel for smelting iron. Their successors at Longdale used coke. How meaningful was this change? And who were their successors?

Coke had been used successfully to make pig iron in Shropshire, England, as early as 1735. On that tight little island coal and iron deposits lay near each other; and timber for conversion into charcoal was scarce. Within sixty years almost all English iron was smelted with coke.

In contrast, ironmasters in the United States continued to prefer charcoal for roughly another six decades. There were several reasons. They lacked transportation facilities to bring together iron ore and bituminous coal or the coke into which they could convert that coal. Wood was still abundant. American buyers favored pig iron from charcoal furnaces, bar iron from charcoal forges; indeed, they had what we can even call a prejudice in favor of the excellent qualities of the charcoal product.

Pennsylvania anthracite was the first fuel to surpass charcoal in American experience. In 1856 almost 70,000 short (that is, 2000-pound) tons of pig iron were produced from bituminous coal and coke, more than five times as much from charcoal, and more than six times as much from anthracite. But by 1880 the coke tonnage exceeded that of anthracite. Charcoal tonnage had not so much as doubled; anthracite tonnage had quadrupled; and coke tonnage had been multiplied almost twenty-eight times.

The men who acquired Lucy Selina Furnace soon after the war included a leader whose connections touched this revolution on both sides of the Atlantic. His name was William Firmstone. He was born in 1810 in Shropshire, England, where the use of coke had been pioneered. In his early twenties he managed an English iron works for two of his uncles. In 1835 he immigrated into the United States. That year the Franklin Institute of Philadelphia offered a gold medal to whoever produced the most iron (but at least twenty tons) from bituminous coal or coke. Accomplished ironmaster that he was, William Firmstone in that year used coke for about a month at the end of a blast in a Pennsylvania furnace. Doubtless he earned the premium. Presumably because he did not know of it, he did not claim it. In fact, no one ever did.

William Firmstone also shared, at least, in introducing another innovation into the American iron industry. To facilitate combustion in furnaces, ironmasters pumped air into them. Hence the term "cold blast." The Jordans' Lucy Selina Furnace used water power to activate their bellows. But would warmed air be more efficient? The immigrant was one of the first to answer that question. He added a hot blast successfully to an Ohio furnace in 1836, to another in Pennsylvania three years later. At his home near Easton, Pennsylvania, ironmaster Firmstone could keep in touch with other improvements. Steam engines replaced bellows to produce the blast. Combustible gases emitted by his furnaces were utilized in the hot-blast stoves.

We do not know that William

Firmstone ever talked with Matthew Fontaine Maury. Each could certainly, however, have interested the other. In the last five years of his life Professor Maury of V. M. I. surveyed and publicized Virginia's natural resources. Striving against heavy odds after 1865, she needed such a salesman. He was impressed with the potential future of the Valley's almost ancient charcoal furnaces and forges. "Throughout its entire length," he proclaimed, "the brown hematites of iron are deposited with marvellous profusion, and in most places are level free." In other words, the ores were easy to mine. "They produce an iron of excellent quality and peculiar properties, which cause it to be much sought after," he added. "I have conversed with some of the principal iron men of Pennsylvania. The supply of ore there is limited, and they begin to see the end of it. They have come down to Virginia to look for iron ores, and have examined the beds and banks of this belt; they consider them practically inexhaustible, have made large purchases, and erected furnaces which are now in successful operation." Thus could Virginia's loyal son, widely traveled and internationally honored as a scientist, write before his death in 1873.

Whether they ever met or not, William Firmstone was an ironmaster like those of whom Matthew Fontaine Maury wrote. Lucy Selina Furnace and accompanying lands in Alleghany and Rockbridge counties—as much as 22,000 acres in the former—were purchased before 1870 by Firmstone and one of his business associates, Ario Pardee of Hazleton, Pennsylvania. In that year they procured from Virginia's General Assembly a charter. With two Philadelphians and Samuel C. Robinson of Richmond, they and their future associates were incorporated as the Wetumpka Iron, Mining, and Manufacturing Company. They could sell capital stock to the extent of a minimum of $200,000, a maximum of six million. In exchange for their lands, Firmstone and Pardee could receive some of the company's stock. The company was granted in quite broad terms the right to engage in any or all phases of the iron business. The time was the same year in which our almost-bankrupt commonwealth sold to private investors, chiefly outsiders, its shares in the ownership of all but one of the railroads it had helped in ante-bellum days to build.

In the next year the company's name was changed by law. It became the Longdale Iron Company. It was also granted the right to build up to twenty-five miles of railroads to connect its mines and works with existing or future rail arteries; it could even exercise the right of eminent domain for its "roadway, depots, stations, or other necessary purposes." In 1875 the legislative charter was further amended. Henry H. Wilson of Philadelphia was named one of the company's five directors instead of Samuel C. Robinson, the Richmonder; and it was empowered to acquire not more than 200,000 acres of land, with a limit of 80,000 in any one county. So much for what Virginia's legislators did about William Firmstone and his associated Pennsylvania financiers.

And what did those industrialists do at Longdale? Lucy Selina Furnace had doubtless stood, abandoned and cold, for about five years. In 1866 it was reported—by J. P. Lesley in the *Iron Manufacturer's Guide*—to be "dilapidated." But in 1870, according to a later article in the Covington *Sentinel*, its venerable walls were again warmed. As of yore, charcoal was the fuel used for the new blast. But by May, 1874, coke fired the old furnace. Thereby hangs a tale of enterprise.

Veteran ironmaster Firmstone would probably not have been interested in Lucy Selina and its ore mines in the first place if he had not foreseen the possibility of using coke. Iron ore and limestone he could mine, as the Jordans had done, along the southeastern slopes of Brushy Mountain. But no coal was to be had near Simpson's Creek. Where would he get coke? And how could he transport it to Longdale? The famous coke ovens at Connellsville, Pennsylvania, were too far away. Rails would provide his salvation. Westward along the roadbed then being extended across West

Beside the two tall smokestacks at Longdale, pictured on the facing page, can still be found some of Lucy Selina's slag. After the war Simpson's Creek no longer activated her bellows.

Virginia by the Chesapeake and Ohio, formerly the Virginia Central, Firmstone looked. About 130 miles west of his iron properties he had the Longdale Iron Company buy coal-yielding lands beside the railroad and the New River. There, at Sewell Station and 949 feet above the roadbed, he would mine a semibituminous seam that could produce a coke particularly efficient for smelting iron; he would build beehive ovens beside the railroad to convert the coal into coke solely for use at Longdale; and all this expense, plus the freight charges for hauling the coke to Lucy Selina, would be recompensed by his sales of Lucy's product. When, in 1874, he smelted his first pig iron at Longdale with coke, he turned out the first iron ever produced in Virginia with that fuel.

His collieries and beehive coke ovens at Sewell became a major operation in themselves. Hundreds of workmen were employed there under the managership of John A. McGuffin. An upper coal seam 1,222 feet above the railway was opened soon; and by 1885 the Longdale Iron Company was building an eight-mile railroad from Sewell Station up Mann Creek in order to open up a third seam. By 1880 fifty coke ovens under Superintendent McGuffin's direction had an annual capacity of 30,000 long tons (of 2,240 pounds each). In the next year he was operating fifty additional ovens and was constructing twenty more. All were intended solely to satisfy the voracious appetites of furnaces at Longdale.

Twice each week each oven was charged with about three tons of coal. Such charges were coked for forty-eight hours. Each Friday or Saturday, however, every oven's charge was increased; and the time the coal was baked was prolonged to three days and nights. So each oven was emptied and refilled three times each week. The yield in 1879 was very near two tons of coke from every three tons of coal. Only seven percent of the product was not inflammable carbon.

Such good West Virginia fuel helped to make it possible to establish a record in Virginia. Proclaimed editor Jedediah Hotchkiss at Staunton in an 1885 issue of *The Virginias,* New River coke was "second to none in the country." In "the practical test of furnace work [it] has shown results that have not been surpassed." The furnace he cited was at Longdale. With seventy-two-hour coke and ore bearing fifty percent metallic iron, it had produced a ton of pig iron from a ton of coke—"and this not for a day at a time, but for some weeks in succession."

Not surprisingly, other collieries and coke ovens were soon developed along the New River in the wake of William Firmstone's. A dozen other mines were opened within a few miles above or below Sewell. Beside the C. & O. rails lay 731 ovens in October, 1882. Much of the coke that railroad hauled either eastward or westward—some, for example, to the large, new furnace of the Low Moor Iron Company, located between Covington and Clifton Forge, and some to smaller furnaces as far eastward as Buffalo Gap. On the other hand, one competitor of the Longdale Iron Company mined iron ore in Alleghany County and sent it by rail to Quinnimont, West Virginia, near Sewell, to be smelted at the site of its coal mines and coke ovens.

Workmen posed about 1905 for a picture of Longdale's impressive tipple house.

Whether the coke was shipped to the ore or the ore to the fuel, William Firmstone had really started something. A professor in the School of Mines of Columbia College in New York examined for two months in 1879 the iron ores and coals along the C. & O. "The coal fields . . . have impressed me even more than the iron fields," he assured Jed Hotchkiss and his readers. And the annual convention of the American Institute of Mining Engineers in the same year heard the praise of New River coke sung by another expert—one who had investigated the results attained with it both at Longdale and in Ohio.

And what of the effects in Virginia? Well, for example, workmen at Longdale numbered as many as 200 or even 400 within a few years. Alleghany County became the iron capital of Virginia and held first rank for several decades. While some other localities declined in population or grew more slowly, Alleghany gained almost sixty-five percent in the decade of the 1870's. At its end more than 5,500 people lived in the county. Virginia's pig-iron output rose from about 9,000 short tons in 1860 to 17,250 in 1870, 30,000 in 1875 and 1880, 164,000 in 1885, and 328,000 in 1890. The peak was reached in 1903 with 544,034 long tons. Alleghany County produced half or more of these totals in several of those years.

Longdale's share in bringing about these changes did not emanate from the old Lucy Selina Furnace alone. Nor did William Firmstone live to take pride in the most glorious days of his industrial empire. He died at Easton in 1877 and was buried there. His sons, Frank and Harry, brought the operation to its fullest vigor and, as we shall see, lived to let it die.

Clarence L. Long, a machinist of the Longdale Iron Company who now lives in Clifton Forge, took this photograph of Lucy Selina's sister, "Longdale No. 2," in 1902. Somewhat larger than Lucy, the newer furnace more than equaled her capacity.

When the company was rechartered by the General Assembly in 1900, their sister, Mary E. Firmstone, also of Easton, was named as another one of the directors, Ario Pardee, Jr., his brother Calvin, and John L. Wilson, all three of whom lived in Philadelphia, were also named in the statute as directors. One Boston capitalist, Augustus Lowell, and J. E. Johnson of Longdale, who by then was the veteran manager there, rounded out the group. Evidently the company's stock was still being held fairly closely within the families of the two chief original financiers. In the 1870's and 1880's the Firmstone brothers each contributed to the journal of the American Institute of Mining Engineers; Frank was elected to its board of directors; and Manager Johnson was elected to its membership. They won a widespread reputation for careful management at Longdale.

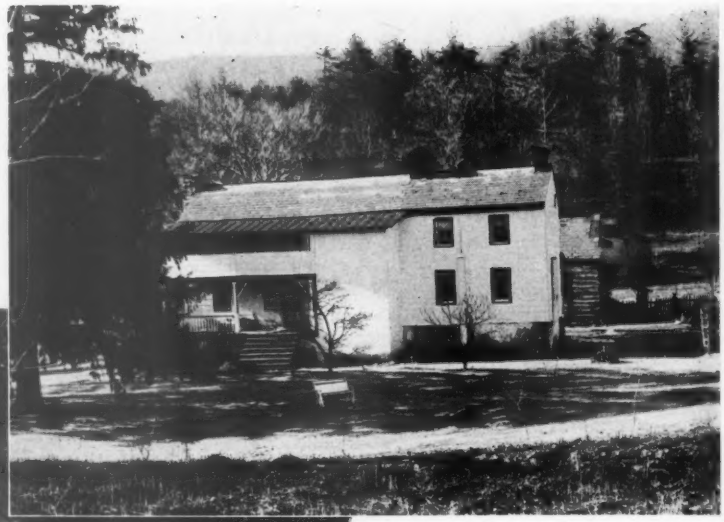
How much Lucy Selina's ante-bellum structure may have been altered for production with coke we do not know. But both of the Firmstone brothers found occasions to describe it in the Institute's *Transactions*. Its stack towered sixty feet high. A central pipe at the top removed the combustible gases. The interior diameter at the top was eight feet. About midway down, where the diameter was greatest, it was eleven feet. The hearth's diameter was six feet. Three nozzles there emitted about 3,700 cubic feet of blast per minute at three and a half pounds per square inch of pressure. The blast was heated to about 750°. The furnace had a capacity of about 3,900 cubic feet. Into its top daily there were fed roughly sixty tons of ore, thirty-five tons of limestone, and thirty tons of coke. In later years, if not at first, the scheduled hours for charging the furnace were eleven in the morning and eleven at night. From the bottom daily there flowed about thirty tons of molten iron, white hot; and tons of slag had to be removed also.

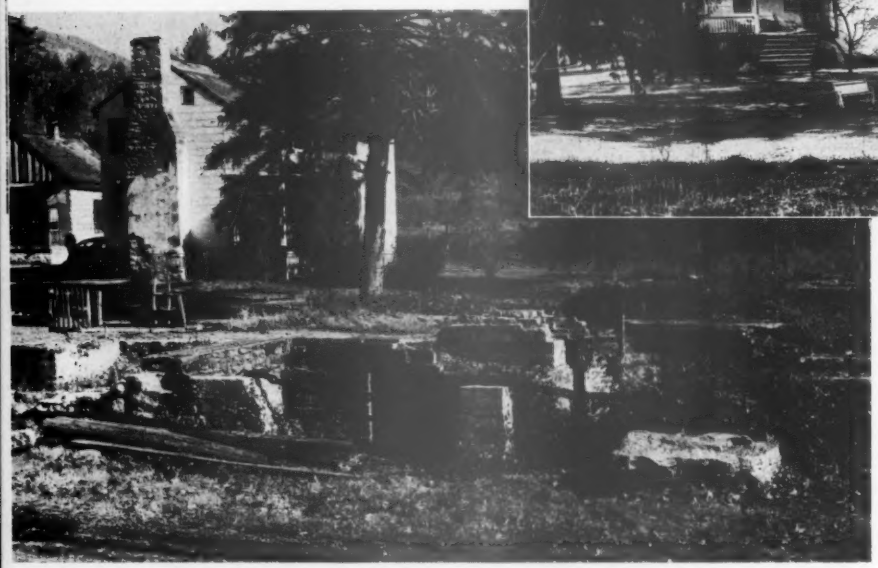
Once it had been warmed and put in blast, the furnace was not allowed to cool until some breakdown occurred. A blast commonly lasted a year or two. Ironmasters took pride in maintaining a blast as long as possible. But when, late in the 1870's, two blasts were interrupted in order that deposits of cadmia—an impure oxide of zinc—could be removed lest they choke Lucy Selina into inefficiency, the Firmstone brothers generously published, with illustrations, the knowledge they gained. And a sample of the cadmia was analyzed in a University of North Carolina laboratory. That led to further publicity about the phenomena. An astounding feature of them was that no zinc had ever been discovered in chemical analyses of the ores, limestone, or coke used at Longdale. Yet the telltale green flame of burning zinc was often seen in Lucy Selina's hearth. Both Frank Firmstone and the chemist at Chapel Hill concluded that imperceptibly minute particles of zinc probably existed in Lucy's ores. How else could they explain cadmia accumulations within ten and fourteen months that weighed more than four and more than twelve tons?

Lucy Selina's production won acclaim among the notable achievements of nineteen bituminous and coke furnaces cited in an authoritative history of iron manufacturing. Three accolades for Lucy were published as part of our nation's tenth census report, that for 1880. In one day of the preceding year she had produced thirty-five long tons of pig, in a week more than 219 tons, and in a month 874 tons. Not the largest furnace, she had been made one of the most efficient. Jed Hotchkiss boasted that she was "a model" for her size.

But Lucy was to have a sister, we have hinted. And with the latter's birth references to Lucy's colorful name began to grow infrequent. Longdale No. 1 and Longdale No. 2 were the new appelations. No. 2, designed to be larger than No. 1 yet efficiently small, was under construction as early as April, 1880. It went into blast by February, 1881. With capacity more than doubled, Longdale began to ship seventy to 120 tons of excellent pig iron daily. For thirty years that rate of production was maintained with few but normal interruptions. One slow-

The Longdale office of the iron company is now used as a private residence. Two other buildings stand just behind it *(right)*. The converted office can also be seen *(below)* from beside the iron company's chimneys, and that perspective puts in the foreground the ruins of some other company structures.





down resulted from the Panic of 1893. Things got so bad that a supply of almost 100,000 tons of unsold iron piled up; and, according to at least one reminiscence, Manager Johnson had to take himself off the payroll for a year.

Normally, ironmaster Johnson had little difficulty selling his product. He admitted publicly in 1883 that he and his nearby competitors were making pig iron at a cost of about $11 to $13 per ton. They were shipping it, f. o. b., at about $12.50 to $16.50 per ton. Their Northern counterparts claimed that it cost them $16 or $17 per ton to produce coke pig. The Yankees would have gone out of business if they had not enjoyed a counterbalancing advantage in being nearer to the largest markets. Long-range in viewpoint, the Longdale manager speculated that producers like himself might find the going tough when their most easily-mined ores were exhausted and their production costs increased.

And where was Longdale iron sold? Almost entirely west of the Alleghenies. This was in contrast to the eastward shipments by water in the days of the Jordans. The Firmstones made deliveries only by rail. Not only did the C. & O. bring eastward the company's coke from Sewell; it also carried even farther westward most of the company's pig. All of Lucy Selina's 1879 output reportedly went by rail to Huntington, West Virginia, and thence to Cincinnati and other markets by boat. Brokers like E. L. Harper & Company of Cincinnati continued for years to be Longdale's best customers. But there were also others. The C. & O. reported that in 1882 it delivered almost ten percent of the 23,490 short tons of iron it received from Longdale to five destinations in Virginia; a large majority of that minority went to Richmond. A similar report for 1883 itemized total shipments aggregating more than 24,000 short tons. Six of every ten went to Huntington; almost two in every ten were waybilled to Ashland and other Kentucky stations; and more than one in every ten was transported to Richmond.

Managers Johnson and McGuffin would have had troubles enough, presumably, if they had only to mine ore, flux, and coal, to make coke and iron, and to get those products shipped. But certainly Johnson had additional responsibilities. Probably he was ultimately, if not directly, in charge of the general-merchandise store maintained at Longdale for his employees. Inevitably, he was concerned one way or another with their housing; a company-owned boarding house has been mentioned by a recent journalist. And the company provided for its workmen and their families one church for

the Negroes, another for the whites. The latter, now used under Methodist auspices, is one of the few company-built structures still standing. Few vestiges of icehouses, stables, engine houses, and other auxiliary buildings can be discerned today. Recently a deteriorated blacksmith shop and machine shop were being used as cow sheds, while the laboratory was seeing service as a tool shed.

Not the least among Manager Johnson's cares was the company's private railroad. First built early in the 1870's, this lifeline of the company and its workmen was a narrow-gauge road. From its junction with the C. & O. near the confluence of Simpson's Creek with the Cowpasture River, it followed the creek upstream some seven or eight miles to venerable Lucy Selina Furnace. Over its rails the company hauled the indispensable coke. The road also ran about four or five miles northeastward beyond the furnace, in order to bring the equally indispensable limestone from the company's quarries and ore from its mines.

Just as it served as merchant for its people, the company also offered them passenger and freight services to the outer world. Hence it was required to submit annual reports for 1908-1910 to the State Corporation Commission. These reveal twelve miles of main track, almost five of sidings. The company owned and operated six locomotives. They hauled eighty ore cars, half as many for coke, thirty-four flat cars, and three "combination passenger cars." Total costs of repairs and operation averaged about $2,000 per month, total revenues, almost entirely from passenger fares, about $100 per month. The railway's losses were written off, of course, as one of the expected costs of the company's business.

We can see in these reports a portent of the imminent cooling of the Longdale furnaces: in 1910 the costs of operating the railroad declined by a third from those of 1909. Evidently the company was producing and selling less iron and was therefore hauling smaller quantities of ore, limestone, and coke. The decline may have endangered profits.

Another portent can be read into the eleven annual reports filed by the company during 1904-1914 with the new State Corporation Commission. Capitalized at $750,000, the company's officers and directors remained almost unchanged. Until near the end, Harry Firmstone was its president. His address was listed as Philadelphia until 1909, as Longdale thereafter—a third bad omen, if we assume that he may have found it necessary to move in order to supervise operations more closely in person. John L. Wilson of Philadelphia was the firm's secretary and treasurer. J. E. Johnson was reported through 1911 to be still the general manager and a director. The remaining three directors were Frank Firmstone of Easton and H. M. Howe and Calvin Pardee of Philadelphia. No new blood was being brought into the company's counsels.

Its maximum production in any year —about 80,500 long tons—had been reached in 1889. Eighteen years later its annual capacity was reported to be only 40,000 tons. Were its ore beds and quarries failing? They had been mined through most of the past ninety years. Yet we shall mention soon a claim that they were mined for five years after 1911. Were the Sewell collieries and ovens growing unproductive? They had been operated through more than four decades. Manager Johnson was on record with a thirty-year-old prophecy that someday his costs per ton of pig would rise. Was what he feared catching up with him at last?

These questions we cannot really answer. But we know that the national economy was making the times hard for Virginia ironmasters. A panic

A company-built church, the two-family residence for the manager and the doctor, and the latter's small office *(foreground)* still stand.

This is a rear view of Harry Firmstone's mansion.

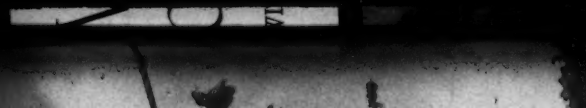
swept the American business world in 1907; the iron industry took its share of the lumps. Competition among coke iron producers had grown stiffer steadily. While the nation's total output of pig was being multiplied more than thirty times during the half century before 1890, the percentage smelted with bituminous coals and coke rose to seventy; the production from anthracite, in whole or in part, fell to twenty-four percent, that from charcoal to six. Virginia's iron output rose in the 1880's to about five percent of the nation's total and fell within three decades to about two. Ores from the fabulous Mesabi Range in Minnesota, shipped across the Great Lakes to furnaces controlled by giant corporations, were revolutionizing the industry. Such corporations operated multiple furnaces and steel mills beside each other; they could even avoid the expense of reheating pig iron by refining it into steel before it cooled. Markets for cold pig from merchant furnaces like those at Longdale, which depended upon distant, independent customers, were being narrowed constantly.

By the last month of 1910 a leading trade journal, *The Iron Age*, could report that only eight of Virginia's twenty-three stacks were in blast. Five months later it announced that only half the offered quantity of Virginia iron was being contracted for at prices as low as $12.25 per ton. Two months later still only five Virginia furnaces were in blast. At the turn of the year 1911 the editor of *The Iron Age* had been able to look at it with no rose-tinted glasses at all. "For four months the shrinkage of new orders" for pig iron "has been pronounced," he observed. "Seldom has the iron trade entered upon a year more beset with uncertainties than is 1911."

Before that year ended the two furnaces at Longdale were numbered among its casualties. When the company reported in 1914 to the State Corporation Commission, it said, as usual, that its business was the manufacture of pig iron; but it added that its operations "have been suspended during the last 3 years"; and it no longer listed E. L. Johnson as a director and as its manager. For five years, 'tis said, the Low Moor Iron Company used its rails and ore mines or quarries. And the mountainous piles of slag at Longdale were sold to road builders. But an unaccustomed quiet settled over the village.

Later in 1914 a Staunton attorney, Colonel J. M. Perry, applied to the State Corporation Commission for dissolution of the company. Its desire to give up the corporate ghost had been advertised, in accordance with legal requirements, in the Clifton Forge *Review*. All but 200 of 7,500 shares had been represented in person or by proxy in the stockholders' final meeting at Longdale on October 28. None voted to persevere. The Firmstone brothers were revealed to have owned just over half of the shares—and Harry almost twice as many as Frank, who was the final president. About fifteen members of the Pardee family owned some shares, none more than 650; one newcomer in the directorate owned none. The attorney apologized for the fact that President Frank Firmstone, "an elderly man," found it too arduous a task to sign his name in the customary manner beside each item in the list of forty or fifty stockholders whose shares were voted by proxy. The lawyer's appeal, with the requisite fee of $5, was received in Richmond on October 30. On that day the Corporation Commission granted it. The Longdale Iron Company was no more.

Unlike William Firmstone, his sons, Frank and Harry, remained bachelors to the end of their days. Harry built at Longdale a twenty-room mansion. On its elaborately-paneled walls hung works of art. In its yard he indulged his fancy for planting an amazing variety of trees. Manager Johnson and Mrs. Johnson, assisted by a full retinue of servants, managed this residence for him, but he set its tone. With English propriety, he required all his guests to dress formally for dinner each evening; with English severity, he denied the meal to anyone who failed to be on time for it. Such are the recollections of two of his employees, a machinist and a stationary engineer, who were on the C. & O. payroll at Clifton Forge five years ago. The mansion, still sporting ornate gas-light fixtures, was sold in 1937 for $8,100—a sign of a depression that had engulfed our whole nation. By then Longdale's population had been whittled down to about fifty. The house still stands. Under the reminiscent name of Lucy Selina Inn, it has welcomed overnight guests traveling U. S. Route 60 during most of the years since then.

Such motorists can also see, even more obviously, the two 106-foot smokestacks pictured on the facing page. These impressive chimneys, reportedly built about 1900, presumably were needed in connection with the stoves and steam engines that heated and pumped the carefully controlled hot blasts that were a key factor in William Firmstone's revival of iron making in the old Lucy Selina Furnace. If he could return to Longdale today, eighty years after his death, those twin chimneys would not necessarily seem familiar to him. But doubtless he would approve the sturdiness with which, almost unmarred, they are still weathering the passing years. ▾ ▾ ▾

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BRIDGE